DOCUMENT RESUME

ED 030 631 SP 002 907

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A Model for the Preparation of Elementary School Teachers. Final Report. Volume II, Appendices.

Florida State Univ., Tallahassee.

Spons Agency-Office of Education (DHEW), Washington, D.C. Bureau of Research.

Bureau No-BR-8-9021

Pub Date 25 Oct 68

Contract-OEC-0-8-089021-3308-010

Note-146p.

EDRS Price MF-$0.75 HC-$7.40

Descriptors-*Behavioral Objectives, Educational Strategies, *Elementary School Teachers, Evaluation Methods, *Preservice Education, Teacher Selection, Teaching Skills

Identifiers-Bills Index of Adjustment and Values, CLEP, College Level Examination Program, Cooperative English Test, Gough Stanford Rigidity Scales, Minnesota Teacher Attitude Inventory, MTAI, SCAT, School and College Ability Test

This volume, consisting of the 11 appendixes to the Florida State Model for the Preparation of Elementary School Teachers, amplifies the description of the model presented in volume one (ED 027 283). A short history of the model's development and a list of project personnel are contained in the first two appendixes. Appendix C further explains and describes four types of preservice experiences for teacher candidates, and appendix D decodes coded activities designed to provide preservice experiences to promote desired teacher behaviors. The largest appendix (E) consists of prototypic content area programs with general objectives, desired teacher behaviors, and coded experiences for each. Additional details and procedures designed to clarify specifications for training the teacher to employ appropriate strategies for the attainment of desired objectives are offered in appendix F, and descriptions on desired areas of competence for teachers in statistics and evaluation compose appendix G. Appendixes H and I focus on information concerning admission and screening of program applicants: the instruments used (with general information, scoring system, validity, reliability, and rationale for each) and a proposed organizational arrangement providing for administrator group decisions and applicant appeals. General objectives and prototypic behaviors for three curriculum areas offer approaches for identifying and diagnosing applicant entry skills in appendix J, and a staff preparation plan in specific appropriate areas is presented in the final appendix. (SM)

ED030631

Final Report

Grant No. Vogel OEC0-8-089021-3308(010)

VOLUME II: APPENDICES

A Model for the Preparation of Elementary School Teachers

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Project Manager

The Florida State University
Tallahassee, Florida

October 25, 1968

The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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APPENDIX A

PART I

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APPENDIX A

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APPENDIX B

HISTORY OF THE MODEL

On October 16, 1967, the U. S. Office of Education issued a request for a proposal inviting a number of larger institutions to submit Model Proposals for Training Elementary Teachers. The announcement included general guidelines for developing the proposal. The most significant requirement was that the proposal be built around the development of teaching behaviors believed to be related to teacher effectiveness. A model stated in terms broad enough to include the major components of the program and specific enough to indicate the direction which the model would eventually take was to be developed and submitted by December 31, 1967.

The Dean of the College of Education, after conferring with other administrative officers of the university, appointed an interdisciplinary task force to develop a model proposal. Thirteen persons from a wide range of educational assignments constituted the membership of the task force. (See Appendix A for listing of staff, supervisors, resource persons, and consultants.)

This task force began to identify the major elements of the problem and to outline procedures for developing the model about 1 November, 1967. This assignment was an extra responsibility for all the task force; no one could be released from other assignments to give special attention to this one. Even so, the group held twelve or more general meetings, and subgroups dealing with the various components of the model held uncounted meetings. As these subgroups developed ideas and position statements, each was brought before the task force as a whole and considered for possible adoption. As a result of this process, by December 17, working papers for six of the seven components of the proposal had been developed. The next obvious step was to link the working papers together, supply transition statements, and develop a summary statement for the project. A first draft of the model was completed on December 21, and the entire task force plus outside consultants were asked to react to it. Further refinements were made on the basis of these reactions, a budget for the specifications was developed, and the personnel to be used in the next steps were identified. The proposal was completed and mailed in time for delivery to the U. S. Office of Education on December 31, 1967.

Enthusiasm for the project and general commitment for the ideas incorporated in it grew as the proposal neared completion. In fact, soon after the proposal was completed an administrative decision was made to continue the task force and to proceed in the direction set by the model, whether funded for the development of specifications or not. In other words, officials of the university early decided that the program for the preparation of elementary teachers was due for a drastic remodeling and that the direction being set by the proposed model was a good one to follow in this undertaking.

It was reasoned that the momentum generated in writing the proposal should not be allowed to wane. Accordingly, the administration made extra time available for some members of the task force between January 1 and March 15, 1968, for the purpose of doing intensive work on the further development of the model. During this period, the task force held several meetings dealing with the ideas that had been left unresolved when the proposal was being developed for submission to the U. S. Office of Education. One of these was a position statement on what conditions in society and the schools could reasonably be expected by 1978. The beginning of the position statement on Society and Education in 1978 and its implications for teacher education was made at this time. Additional position statements on admissions, in-service education, and further refinements on teacher behaviors were also drafted in rough form. Most importantly, the task force gained added experience in working together as a group, and became more unified with reference to philosophic and psychological positions.

Early in March 1968, official word came from the U. S. Office of Education to the effect that Florida State University would be funded for the development of specifications for the model proposal that it had presented. It then became possible to make definite faculty assignments to work on these specifications. The manager of the project was assigned to full time from March 15 to October 31. Other faculty members and graduate students were assigned as follows:

NUMBER	STATUS	PROPORTION OF TIME	TOTAL TIME EQUIVALENT
1	Faculty	4/5	4/5
1	Faculty	3/4	3/4
1	Faculty	1/2	1/2
3	Faculty	1/2	1 1/2
32	Faculty	1/12	2 2/3
11	Graduate Assistants	1/4	2 3/4
2	Secretaries	3/4	1 1/2

In summary, the equivalent of six full-time faculty members for the duration of the project spent their time in the development of specifications. They were supported by the equivalent of two and three-fourths full-time graduate assistants and one and one-half full-time secretaries. It is significant to note that a total of thirty-nine faculty members participated to varying degrees in the actual development of the specifications. Many more participated in reviewing the materials that were developed by the writing members of the task force. In addition, several representatives from the State Department of Education participated to varying degrees both in the development of the specifications and the reactions to the materials developed by the staff. To a lesser degree, representatives of public school systems also participated in the development of the specifications.

The organizational structure for writing the specifications and the procedures used in developing them are of significance. At the outset the faculty members assigned to the project were divided into three groups: project manager, supervisors, and resource persons. The project manager and two supervisors constituted a sort of planning and coordinating group with final responsibility for developing the specifications for the various components and bringing them together into a unified whole. Each supervisor accepted responsibility for certain components and each resource person was assigned to one or more of these component groups to assist in developing these qualifications. Usually, the supervisor took responsibility for outlining the component to be worked on, and for identifying the major issues and problems that would need to be faced by the group giving attention to that component. After each meeting a written summary was made of the decisions reached and copies of these were made available, not only to members of the subgroups working on a particular component, but also to the manager of the project and the other two supervisors. As agreements were reached on almost a one-at-a-time basis, these were stored for future use by the supervisor in making the first general draft of the specifications for the component under consideration. These first drafts were reviewed by the supervisors, then by faculty members with particular reference to those who had worked on a component. The reviews were in the form of hearings in which all persons with interest were encouraged to give their reaction. On the basis of these, second drafts were generally made and reviewed in like fashion before they were turned over to the manager of the project for revising and editing to conform to the general pattern of the model.

As the groups worked on the various components they had assistance from outside in two forms. First, considerable use was made of consultants. (See Appendix A), especially with reference to Component IV, which was concerned primarily with teaching behaviors. A total of fourteen outside consultants were used. This form of outside help was supplemented by visits on the part of nine faculty members to other campuses where developments related to this model were known to be underway. These included the University of Tennessee, the University of Wisconsin, and Stanford University. These visits proved to be helpful, both from the standpoint of the ideas which were gathered and the descriptive materials that were made available.

Ultimately it was necessary for one person to do the rough draft writing for all of the components. The first complete draft of the specifications for the model was finished by the manager of the project, and made available for general scrutiny on August 8, 1968. Hearings were held on this draft and, on the basis of reactions, a second draft was drawn. Copies of it were sent to persons thought to be especially interested. The reactions to the second draft served as the basis for a third draft which was completed on September 30.

APPENDIX C

EARLY AWARENESS-INVOLVEMENT: DETAIL OF PROGRAM

During the underclass phase of the program, a prospective trainee will undergo experiences designed to promote awareness of important elements of the teaching role, and to provide opportunities for active involvement in experiences with children and with school personnel.

It is strongly suggested that the total package of experiences begin early in the first underclass year, and continue without break until such time as a student is accepted and enters the model program. The organization of such early awareness experiences can be flexible to suit conditions in the implementing institutions.

Types of Experiences

Chapter IV in Volume I of this document provides specifications for an early awareness-involvement program. It is suggested that this program be structured to involve prospective trainees in four basic types of activities.

Clinical or Field Experiences

Experiences should be provided which bring a prospective trainee into contact with the functions, activities, and problems of his anticipated role. Experiences of four general kinds are suggested:

1. Experiences with children in school situations
    - a. Observing in several classrooms to see varied learning activities, age levels, and cultural settings.
    - b. Participating as a teacher aide or assistant.
    - c. Accompanying children on field trips.
    - d. Interviewing children, noting differences in specified areas, such as language development and responsiveness.
    - e. Tutoring individuals.
    - f. Viewing film clips and videotapes of selected teaching-learning activities.

2. Experiences with children in non-school settings

   a. Assisting in swimming or playground instruction.

   b. Working in a children's ward of a hospital.

   c. Assisting with library programs, arts and craft programs for children.

   d. Working in a children's museum, Little Theater, or dance group.

3. Experiences in the community.

   a. Observing several agencies at work, such as juvenile court, welfare and church groups, and groups designated to help abused and neglected children.

   b. Observing a coordinating council of youth services and committees designed to coordinate the complex of city-county-national agencies in the typical American Community.

   c. Serving as a volunteer worker in one or more agencies.

   d. Observing the scope of educational support in such community groups as the Chamber of Commerce, civic clubs, taxpayer associations, and in the statements of persons running for elective offices.

4. Experiences with the total school program and the school as an institution of society

   a. Attending a school board meeting.

   b. Observing the work of the superintendent in a small system, and of the numerous offices in a large system in order to glimpse the scope and complexity of the school as an on-going business system.

   c. Seeing instructional leaders engaged in long range planning activities and working with curriculum committees.

   d. Visiting the principal's office in more than one school.

e. Hearing panels of practitioners describe their current concerns and activities.

f. Riding several school buses on their regular routes to note the varied social and economic aspects of the community.

g. Hearing representatives of industry present descriptions of their educational programs.

Continuing Seminars

Structured around experiences undergone in the clinical or field setting, a continuing seminar under the leadership of a counseling professor can clarify and extend the quality of the interpretations of experiences. Continuing weekly seminar sessions can provide a student the opportunity:

1. To share experiences.
2. To form generalizations from the experiences encountered.
3. To interact in a group which can provide the satisfaction of mutual support in the adventure of learning.

Counseling and Planning Activities

Individual counseling and planning with the program faculty member involved can help a student by:

1. Guiding his tutorial and clinical experiences.
2. Planning a program of self-appraisal and personal development.
3. Providing a critical inventory of experiences.

Large Group Presentations

On occasion, individual seminars or several groups together may attend lectures given by educators of outstanding national reputation, and observe video-tape presentations of interest.

APPENDIX D

PRE-SERVICE TRAINING: EXPERIENCE KEY

Suggestions are made in Chapter VII of the model document for the types of activities which should best provide the trainee with experiences which promote development of the desired teacher behaviors. Implementation of the model program will demand extensive interpretation of objectives and behavior outcomes and subsequent development of material and experience packages to fit appropriate activities listed.

Included in this appendix are descriptions of each type of activity or experience identified as useful in training sequences. In the body of the model document, these activities and experiences are listed in coded form only.

DESCRIPTION OF PRE-SERVICE EXPERIENCES OF TRAINEES KEY

Individual Activities

Cmp	Computer Interaction
Int	Interview and Consultation
IS	Independent Study
LAV	Laboratory and Audio-Visual
Wr	Writing

Group Activities

Dsc	Discussion Group
Lct	Lecture
Prj	Project
Prs	Presentation

Field Observations

Ocl	Observation in Class
OO	Observation at Other Site

Simulation

SmO	Observing Simulated Situation
SmP	Producing Simulation

Teaching

Tcl	Classroom
Tsg	Small Group
Tt	Tutorial (one student)

Individual Activities

Experiences in which the trainee works alone with some medium, or in a one-to-one relationship with someone acting in a supervisory capacity.

Definition:

Cmp	Computer Interaction Work with Computer Assisted Instructional Program or analysis of computer data.
Int	Interview and Consultation Consultations or individual discussions with professors, with school personnel such as teachers, principals, etc., or with others who are involved in the training program.
IS	Independent Study Library work, self-chosen or assigned reading of books, periodicals, or other written or printed matter.
LAV	Laboratory and Audio-Visual Experiences in which the trainee independently and individually observes, manipulates, or produces media equipment or materials (audio-visual equipment such as projectors, tape recorders, and television; laboratory equipment and apparatus; globes and models; flat graphics such as maps and charts; AV material such as films,

transparencies, and slides; certain productive media such as crayons, clay, paint, etc.) or interacts with living things in experimental settings.

Wr	Writing Active production of papers, summaries, anecdotal records, instructional design plans, etc., whose primary purpose emphasizes value to the trainee rather than evaluation of progress, though such use may be made of the production.

Group Activities

Participation by the trainee as a member of a group.

Definition:

Dsc	Discussion Discussion with group size small enough for active participation by the trainee and his colleagues.
Lct	Lecture Attendance as a primarily passive viewer of a live or filmed presentation with group size unlimited.
Prj	Project Trainees work together on some activity involving investigation, research, production of material, mutual assistance, or other cooperative venture.
Prs	Presentation Trainees present some kind of extemporaneous or planned activity, such as a panel discussion, debate, model lesson, or informational report to an audience, usually of other trainees.

Field Observations

Experiences taking the trainee to the natural setting of an activity.

Definition:

Ocl	Observation in Class Observation in a classroom, i.e., a room in an operating school where children are participating in a normal school activity; the trainee may or may not have minimum non-teaching responsibilities for interacting with children or materials.
OO	Observation at Other Site Observation at any off-campus site to be visited by a trainee as part of the program; possible field trip sites for school children, homes of students in an observed classroom, offices of community agencies, etc.

Simulation

Experiences simulating real situations that may be encountered during teaching, or experiences which attempt to approximate classroom conditions in some other setting.

Definition:

SmO	Observing Simulated Situation Experiences in which the trainees view and react to situations which are filmed, audiotaped, or otherwise mediated, or to live presentations by colleagues or others acting out assigned roles.
SmP	Producing Simulation Active participation by the trainee in the preparation of a simulated situation, either by participating in a role playing activity, or by producing an audiotape or some other mediated product.

Teaching

Experiences in which the trainee interacts with children in an instructional capacity; micro-teaching is included as well as other classroom experiences in which the trainee has full or partial responsibility for instructing students.

Definition:

Tcl	Classroom Teaching activities involving a class-sized group of students in a school.
Tsg	Small Group Interactions with micro-groups, or with small student groups for activities described above.
Tt	Tutorial (one student) A one-to-one relationship with an elementary student for remedial, diagnostic, or enrichment activities.

APPENDIX E

CONTENT AREAS: SELECTED PROTOTYPIC PROGRAMS

The material included in this section represents the efforts of a diverse group of resource personnel to adapt content area expectancies to model specifications. Since the development of the model proceeded concurrently with these efforts, and final format and direction were not determined until the final stages of the planning period, it is not surprising that the content area programs manifest a kind of cross-section of the evolutionary stages through which the model approach passed.

The limited planning time allotted for developing the program specifications made it impossible to reformulate the work of each content area to uniform completeness and consistency of design. However, since this diversity provides excellent examples of the kind of curriculum design which was generated by the model approach, model staff editors felt that there was no disadvantage in presenting most material in original or only slightly modified form.

This Appendix, therefore, presents the content area programs which are representative of the evolving stages of the model, as well as those which are relatively complete, detailed, and which conform more closely to the final design.

SCIENCE EDUCATION

GENERAL OBJECTIVES	PROTOTYPE TEACHER BEHAVIORS	EXPERIENCE (Codes)
1. Knowledge of the way in which the child views many science-related phenomena	1. The trainee will identify by individual interviews with children, selected logical operations available to them. These logical operations will include conservation of length, number, weight, and displacement volume.	Tt,Wr
	The trainee will identify some common instructional procedures in science that would have little chance of success with non-conservers of length, number, weight, area, and displacement volume.	IS,Wr, Tt
2. Knowledge of objectives, curriculum, and curriculum materials appropriate to the several levels of elementary students	2. The trainee will communicate, verbally or graphically, the underlying rationale of selected elementary science curricula.	IS,Wr, Dsc
	The trainee will identify from currently available curriculum materials,instructional activities appropriate for stated	

	instructional objectives and give evidence for their appropriateness.	LAV,IS, Wr
	The trainee will identify and design science instructional objectives appropriate for elementary school children at various stages of intellectual development and give evidence for their appropriateness.	IS,Wr, Prj,Dsc, Tt,Tsg
3. Knowledge of effective teacher roles and useful strategies for teaching science to elementary students	3. The trainee will communicate a role of the elementary school science teacher which depicts him as a guide in helping the child discover knowledge for himself rather than a disseminator of predigested knowledge.	IS,Wr, Dsc
	The trainee will state the purposes of science as involving doing (inquiry, discovery, experimenting, etc.) in preference to being (body of knowledge, explanation of nature, the way we solve a problem, etc.).	IS,Wr, Dsc

	The trainee will observe and analyze classroom behaviors of teachers and children.	Ocl
	The trainee will identify teacher and student behaviors appropriate for stated instructional objectives.	Ocl

MUSIC EDUCATION

GENERAL AND ENABLING OBJECTIVES	PROTOTYPE TEACHER BEHAVIOR	EXPERIENCE (Codes)
1. A basic understanding of the musical element of rhythm	1. The trainee will demonstrate reoccuring beats, groupings and subdivisions.	IS, Int
2. A knowledge of symbols of music notation and their **meaning**	2. The trainee will demonstrate ability to read music notation (several programmed texts are available in this area, or may be developed locally. Students will also be encouraged to participate in a university musical organization.	IS,Cmp, Int

3. A knowledge of basic principles and ability to play instruments commonly used in the classroom	3. The trainee will demonstrate ability to perform on bells, autoharp, a string instrument, and selected rhythm instruments with emphasis on rhythm, melody, and harmony.	IS, Int, Prs
4. A knowledge of suitable audio-visual materials in the area of music for elementary students	4. The teacher will demonstrate ability to select appropriate audio-visual materials for teaching music and for incorporating music into classroom units and/or projects.	LAV, SmO, Wr, IS
5. Knowledge of the content and organization of an effective music program in the classroom	5. The trainee will select appropriate musical experiences, reinforced by musical concepts, sequential musical growth; and demonstrate a knowledge of materials appropriate to age-groups he has selected (as: 3-6; 6-9; or 9-13+).	Lct, Dsc, IS, Wr, Prs, Prj
6. Awareness of elements involved in actual music instruction to elementary classes (e.g., teacher roles; range of pupil musical skills; group vs. individual performance)	6. The trainee will observe and analyze situations similar to those in which he will soon be actively involved.	Ocl, Prj, SmO

7. Ability to select objectives, materials, and strategies in planning for instruction in the area of music	7. Given scrambled elements of instructional planning, the trainee will identify objectives, content, and strategies appropriate to simulated conditions presented.	SmO,Wr, LAV
	Given simulated learner data, the trainee will select appropriate objectives, content, and strategies for instruction.	SmO,IS, Wr
8. Ability to implement planning in actual instructional situations	8. The trainee will plan for instruction and teach music to elementary students.	Tt,Tsg, Tcl

MATHEMATICS EDUCATION

A Prototype Objective: The ability to teach mathematics to students by an inductive (discovery) technique.

1. Recognition of stages in an inductive development: problem recognition, instantiation (controlling relevant variables), conjecturing, testing	1. Given experiences in which he learns mathematical concepts via inductive sequences: 1.1 The trainee will both answer exercises within an inductive sequence and	

conjectures, verbalization, informal rationalization, deductive proof (Note: These stages should be implicitly identified by the student--not named and ordered by the teacher.)	suggest additional exercises for that sequence. 1.2 The trainee, having completed a developmental (inductive) sequence on some mathematical concept, will correctly complete criterion items (exhibiting at least nonverbal awareness of the desired concept). 1.3 At the end of any given stage in an inductive development, the trainee will suggest examples of activities of the next stage.
2. The ability to develop his own inductive sequence in attacking a mathematical problem	2.1 Given a mathematical problem which can be attacked by inductive methods, the trainee will develop an inductive sequence ending in the solution of the given (criterion) problem. 2.2 Given a mathematical problem which can be attacked by inductive methods, the trainee will develop a generalization relevant to the solution of the given problem.

	2.3 Given a mathematical problem which can be attacked by inductive methods, the trainee will develop a generalization relevant to the solution of the given problem including a deductive proof of the generalization stated.	
3. The ability to distinguish between an empirical generalization and a deductively established theorem and to recognize the role of each in doing mathematics	3.1 Trainee will distinguish among generalizations over an infinite set which have been: (1) supported but not proved, (2) verified for the given set although not computationally tested for each subset of that set, (3) shown false by virtue of a counterexample. 3.2 The trainee will use a counterinstance to support his assertion that a generalization is false.	

	3.3 The trainee will specify (by quantification over both finite and infinite sets) domains for which a given statement is true (false).	
4. The ability to describe in detail inductive teaching techniques	4.1 Given any inductive sequence, the trainee will characterize it in terms of extent and timing of verbalization, range of content, and amount of practice material. 4.2 The trainee will illustrate each technique for specific topics and for specific ability and achievement levels. 4.3 Given an inductive sequence, the trainee will analyze its quality, its intended behavioral outcomes, and its suitability for different ability levels.	

5. The ability to critically analyze inductive teaching	5.1 The trainee will critically analyze inductive teaching done by a demonstrator teacher, a fellow student, or by himself. This includes both "live" and recorded teaching. The critical analysis should reveal that the trainee can recognize the specific teacher behaviors that lead to pupil discovery.	
6. The ability to write lesson plans including inductive sequences	6.1 The trainee will write inductive sequences that include the proper amount of verbalization at the right time, questioning techniques that lead directly to pupil discovery, and practice material that tests pupil attainment of the generalization.	
7. The ability to teach an inductive sequence.	7.1 The trainee will use his own prepared inductive sequences with groups of elementary school children.	

INDUSTRIAL ARTS

Introduction

Beginning teachers need to recognize that industrial arts activities (constructing, repairing, and designing with the help of tools and materials, using appropriate manipulative techniques) can provide children with opportunities for exploration, manipulation, and experimentation. In addition, concepts and attitudes related to the role of technology in man's past, present, and future are an important part of the elementary curriculum, and such concepts and attitudes can be formed within the framework of a program which includes industrial arts methods and materials.

Experiences with such methods and materials are not organized as an added subject in the curriculum, but are an integral part of the total program. Planned activities include (1) tool-manipulation projects which relate to and reinforce subject-matter learning content or personal and recreational purposes, and (2) study projects dealing with industrial technology with emphasis upon organization, materials, processes, occupations, products, problems, and effects on man's culture.

As part of the training program for elementary teachers, these activities serve a triple purpose. First, a knowledge of the role which can be played by the manipulative and study activities in initiating, reinforcing, and evidencing desired outcomes in subject matter areas will help the prospective teacher in planning objectives, selecting content, implementing strategies, and evaluating. Second, practice in actually planning and carrying out activities will assure that he has the ability to arrange such experiences in the classroom. Third, an awareness of the role of manipulative activities in promoting important affective objectives, and in providing the teacher with opportunities to observe children in a special setting, adds another dimension to the teacher's ability to take responsibility in a professional manner.

In the program which follows, it should be clear that the conditions under which industrial arts activities are carried on are strongly associated with a host of techniques which, for a long time, have been associated with characteristics of good pedagogy. It is not difficult to see, in such activities, concrete examples of individualizing of instruction, emphasis on learner performance, and active rather than passive involvement of the learner. There are situations which approximate those of real life, providing opportunities for learning which is immediately transferable to out-of-school situations. There is also utilization of natural curiosity and the desire to handle and to create.

INDUSTRIAL ARTS

GENERAL AND ENABLING OBJECTIVES	PROTOTYPE TEACHER BEHAVIORS	EXPERIENCE (Codes)
1. Ability to analyze the role of industrial arts activities in planning and implementing objectives in the elementary school		
A. Ability to relate experiences using industrial arts methods and materials to principles of child development	A. Given a description (written or simulated) of a sequential program of individual arts activities, the trainee will analyze the experiences in terms of the relationships to principles of cognitive, social, and psychomotor development of elementary school children.	IS, Wr, SmO, Dsc
B. Ability to recognize the role of industrial arts experiences in promoting major objectives in the domains of cognitive, affective, and psychomotor behavior	B. Given a set of selected long term and intermediate objectives, the trainee will formulate instructional objectives involving exploration, manipulation, and experimentation, utilizing	IS, Wr, Dsc, Prj, LAV

	materials, tools, and techniques of industrial arts in such a way that long term and intermediate goals are implemented.	
	Given an instructional task of assisting in planning of a set of lessons in a selected situation, the trainee will demonstrate ability to recognize the role of such activities in implementing various kinds of goals.	IS,Wr, Int,LAV, Prj
2. Knowledge of the content and organizational patterns for industrial arts experiences used in current elementary programs	2. Given a set of written descriptions or opportunities to observe activities in which content and organization of such experience is demonstrated, he will give evidence of ability to recall and recognize significant elements.	IS,Wr, SmO,Ocl, LAV
3. Ability to select and implement strategies for use with industrial arts activities	3. Given an instructional task involving the selection and implementation of strategies for use with such activities, he will demonstrate ability to perform successfully, and to modify performance on the basis of feedback..	Wr,Int, Tsg

4. Ability to evaluate learning outcomes involving skills, knowledge, and attitudes in industrial arts	4. Given an instructional task in which such outcomes are to be evaluated, he will demonstrate ability to select and implement appropriate techniques, determine reasonable criteria and conditions, report findings in a satisfactory manner, and utilize data from findings appropriately.	Wr,Int Tsg,Dsc

HEALTH EDUCATION

Introduction

There are two major dimensions described in the outline of objectives to be achieved by trainees during the pre-service phase in the area of Health Education. One dimension relates to the instructional functions carried out by a teacher as he shapes and implements the health curriculum in the classroom, and thus involves skills and knowledge which are analagous to the content prescribed for subject-matter areas such as language arts and social studies. The other dimension relates to those supra-instructional responsibilities of teaching which are concerned with student and community health, and require knowledge and skill in areas such as first aid, recognition of symptoms of disease or disability, and referral procedures.

Since both of these dimensions will involve the use of the resources of a Health Education staff, the objectives are included in this section under the Health Education heading. However, each is treated separately so that the distinction is made between CURRICULUM-RELATED OBJECTIVES and OBJECTIVES RELATED TO SUPRA-INSTRUCTIONAL RESPONSIBILITIES.

Health Education: Curriculum-Related Objectives

GENERAL AND ENABLING OBJECTIVES	PROTOTYPE TEACHER BEHAVIORS	EXPERIENCE (Codes)
1. Knowledge of and ability to use a conceptual approach to curriculum design in health education	1. Given an approach such as that used in the School Health Education Study (*Health Education*, 1967), *the trainee will demonstrate* knowledge of the rationale and design, and ability to use the approach in planning a lesson on a given topic.	IS,Wr, Dsc
2. Ability to formulate instructional objectives which are compatible with acceptable broad aims of Health Education, and which are stated in terms of pupil behaviors relating to the several behavioral domains	2. Given a lesson topic and evaluative data for a group of learners, he will formulate, for a particular lesson, a set of instructional objectives stated in terms of behaviors in each of the behavioral domains, and relate each objective to long-range aims such as those described in the School Health Education Study (*Health Education*, 1967).	IS,Wr, Dsc,Prj

3. Ability to select and organize content in the area of health education A. Knowledge of current instructional materials and sources of material	A. The trainee will locate several examples and sources of current material which pertain to a given developmental level and describe each in terms of designated criteria of suitability.	IS,LAV, Wr,Prs
B. Ability to select content which can be used effectively for the implementation of particular objectives	B. Given a set of instructional objectives, the trainee will select content and demonstrate its effectiveness in implementing the objectives.	IS,Wr, LAV,Int, Tsg,Ocl
C. Ability to organize content appropriately for a particular learner or group of learners	C. Given a description of a particular learner or group of learners, he will organize the content to facilitate most efficient interaction.	IS,Wr, Int,LAV

D. Awareness of current trends and local requirements relating to health instruction	D. Given such topics as sex education, use of alcohol, tobacco, and other drugs, flouridation, and quackery, the trainee will participate in a project to determine local and state requirements and practices dealing with such topics, and compare these with practices advocated by leading authorities: in the field of health education.	Wr,Prj, LAV,Int Dsc
4. Ability to use teaching strategies which effectively mediate the interaction of students with the content of health education	4. During a period of teaching responsibility, the trainee will select appropriate strategies and implement them in a series of interactions with students, demonstrating the ability to use both non-personal media and strategies involving interpersonal interaction.	Wr,Int, Tsg,Tcl, LAV

5. Ability to use evaluative techniques to determine the extent of achievement of learning outcomes relating to health education	5. During a period of teaching responsibility, the trainee will evaluate learning outcomes in the several behavioral domains using instruments and techniques with a suitable degree of validity and reliability as determined by specified criteria.	Wr,Int, Tsg,Tcl

Health Education: Objectives Related to Supra-Instructional Responsibilities

GENERAL OBJECTIVES	PROTOTYPE TEACHER BEHAVIORS	EXPERIENCE (Codes)
1. Knowledge of and ability to apply first aid procedures	1. Given a standard course in first aid, the trainee will perform acceptably.	IS,Lct, Dsc,LAV, Wr,Prj, Prs
2. Ability to follow and interpret the results of screening procedures relating to student health in the classroom in areas such		

as the following:		
A. Weighing and measuring	A. Given a group of children, and appropriate instruments, the trainee will weigh and measure each one to an acceptable degree of accuracy, and interpret the results in terms of norms.	Wr,Dsc, Ocl,Int, Tcl
B. Testing of vision and hearing	B. The trainee will administer standard tests for vision and hearing acuity, record results accurately, and interpret results in terms of norms.	Ocl,Dsc, Wr,Int
C. Tuberculin testing	C. He will demonstrate understanding of testing procedures and knowledge of the significance of test results.	Ocl,Dsc, Wr,Int
D. Observation of physical appearance and abnormal behavior	D. Given a set of actual or simulated observation sessions, the trainee will demonstrate alertness to signs of abnormality	Ocl,SmO, Wr,Int

	in behavior and appearance in the following areas: Eyes, ears, nose and throat, skin and scalp, teeth and mouth, general condition, posture and musculature, emotional behavior, disease symptoms.	
E. Ability to follow local procedures regarding referral and maintenance and use of health records	E. Given a set of simulation experiences designed to test such ability, the trainee will perform acceptably.	SmO, Wr, Prs

PHYSICAL EDUCATION

PART ONE: Developmental Growth Patterns

GENERAL AND ENABLING OBJECTIVES	PROTOTYPE TEACHER BEHAVIORS	EXPERIENCE (Codes)
1. Ability to apply knowledge of developmental growth patterns of childhood in comprehending significant elements of a physical education program in elementary school		
A. Ability to analyze and assess developmental levels in areas of psychomotor skills	A. Given a descriptive list of characteristics and performance criteria in areas such as eye-hand coordination, attention span, general body coordination, etc., the trainee will assess a number of individual children in terms of their status and readiness for participation in a given activity.	Is,Wr Dsc, SmO, Od

B. Ability to assess activity levels in terms of norms	B. Given a scale for determining activity level, he will make assessments, in terms of given norms, for each of a number of individual children.	Oo, SmO,
C. Ability to recognize and identify those characteristics of children at a given developmental level which relate to the physical education program	C. Given the following: 1. school health and medical records 2. physical examination records, and 3. observation session for a number of elementary school children, the trainee will identify characteristics and conditions which relate to the physical education program in terms of individual needs, deviations from norms, etc.	Dsc, Prj, SmO, Oo
PART TWO:	Basic Movement Patterns	
1. Ability to distinguish, analyze and evaluate elements of basic movement patterns		

A. Knowledge of classifications of basic movement patterns	A. Given an observation session in which basic movement patterns are demonstrated, the trainee will identify locomotor patterns such as walking, running, jumping, and leaping; non-locomotor patterns such as bending, stretching, twisting, turning, reaching, bouncing etc.; and combinations such as running and dodging, running, picking up, falling, and throwing, etc.	SmO, Oo, Dsc
B. Knowledge of basic mechanical principles as applied to body movement	B. Given opportunity to demonstrate mechanical principles which apply to human movement, the trainee will show evidence of ability to identify movements which illustrate given principles, and to analyze a given set of movements in terms of the principles involved.	LAV, Is, Wr, Prs

C. Ability to recognize simple and complex movement patterns and to distinguish the basic movement elements involved	C. Given an observation session in which simple and complex movement patterns are demonstrated, the trainee will correctly identify each type, and analyze complex patterns in terms of the basic elements involved.	SmO, Oo, Prj
D. Ability to assess basic movement patterns in terms of given criteria	D. Given a videotape in which his own basic movement patterns or those of another person are shown, he will demonstrate ability to assess the patterns in terms of criteria for efficient movement.	LAV,SmO, Dsc, Int
2. Knowledge of and ability to apply techniques for diagnosing and remedying faults in basic movement patterns		
A. Ability to recognize and describe common faults in basic movement patterns	A. Given an observation session in which common faults occurring in the basic movement patterns of children are demonstrated, the trainee will recognize and	SmO, Oo,Prj, Prs

	correctly describe movements which illustrate inefficient movement patterns.	
B. Knowledge of activities suitable for practicing and improving the quality of basic movement patterns	B. Given descriptions or demonstrations of a wide range of activities, the trainee will identify those which are best suited for practicing and improving the quality of each of a given set of basic movement patterns.	Is, Wr, Prj, LAV, Oo, SmO
C. Ability to evaluate the status or progress of students in basic movement patterns	C. Given the instructional task of evaluating the progress or status of basic movement patterns for a given group of students, the trainee will: 1. participate in a project to develop a check sheet of common faults which can be used as an effective instrument of evaluation;	Is, Wr, Prj, Tt, Tsg

	2. use the instrument in an evaluative activity; and 3. use the results of the evaluation for an appropriate purpose.	
D. Ability to select activities suitable for the practice and improvement of basic movement patterns by children at a given developmental level	D. Given the instructional task of selecting activities for a particular group of children, the trainee will select appropriate activities and justify the selection on the basis of sound criteria.	Is, Wr, Prs, Int
E. Ability to plan and implement strategies for providing practice and improvement of basic movement patterns for a given child or group of children	E. Given an instructional objective, evaluative data, and appropriate content, the trainee will plan and carry out strategies with a given child or group of children, demonstrating the ability to select activities on the basis of appropriate criteria, interact with an acceptable degree of skill, and modify his own actions on the basis of feedback from the child's performance.	Is, Wr, Tsg, Tcl

3. Ability to plan, carry out, and evaluate activities designed to provide practice and improve basic movement combinations	3. Given the instructional task of planning and carrying out activities designed to promote objectives relating to basic movement combinations, the trainee will demonstrate the ability to choose a series of games or other activities, interact with children in carrying on the games and assess the learning outcomes in terms of the objective.	Is, Wr, Tsg, Tcl
4. Knowledge of a theoretical approach to patterns of movement which identifies influences in terms of space, time, force, and flow	4. Given a series of experiences involving physical activity, and designed to provide opportunity to explore and define factors which influence movement patterns, the trainee will demonstrate knowledge of such factors as: 1. time, involving speed and duration; 2. force, involving intensity; 3. space, involving direction, levels and range; 4. flow, which involves the synthesis of events on a movement continuum from simple to complex.	Is, LAV, Dsc, SmP

5. Knowledge of and ability to apply principles relating to development of social skills, healthy attitudes, and appropriate habits through activities in the physical education program	5. Given an instructional task in which objectives include the development of social skills, the trainee will demonstrate ability to apply principles involving factors such as the following: 1. provision of opportunity to develop pupil leadership abilities; 2. provision for cooperative activities such as planning game strategies, line-ups, ground rules, etc.; 3. provision for developing healthy attitudes in areas such as appropriate sex roles, competition, etc.; and, 4. provision of activities that provide opportunities to promote awareness of safety factors, symptoms of fatigue and need for rest and relaxation, and similar elements which contribute to better health.	Wr, Int, Dsc, Tsg, Tcl

PART THREE: Games, Sports, Dance, Gymnastics, and Related Activities

1. Knowledge of games, sports, dance, gymnastics, and related activities basic to the physical education program in elementary school	1. Given a list of games, sports, and activities involving dance and gymnastics, the trainee will select and describe those which are basic to the physical education program in the elementary school.	Is, Wr, Prj, Prs
2. Ability to perform and participate in such activities with a reasonable degree of skill	2. Given opportunity to perform and participate in a given set of activities, he will demonstrate the ability to do so with a reasonable degree of skill.	Prs
3. Knowledge of and ability to apply basic principles relating to orderly sequential presentation of games, sports, dance, gymnastics, and related activities	3. Given an instructional task involving presentation of activities such as rules and conditions of a game, basic principles and skills involved in a sport, movements of a dance, etc., the trainee will demonstrate ability to apply basic principles for orderly, sequential presentation.	Prs, SmP, Tsg, Tcl

4. Knowledge of and ability to apply criteria for selecting activities appropriate to a given group of children	4. Given an instructional task involving selection of activities involving games, sports, dance, gymnastics, and related activities, the trainee will demonstrate ability to describe and apply criteria relating to such areas as: a. degree of pupil readiness and level of prerequisite skills b. general activity level of age group c. requirement for flexibility or structure (rules) for one group d. concern for physical factors such as posture, endurance, strength, etc., and need for cooperation by pupils in promoting improvement in such areas e. provision for development of appropriate cognitive understandings.	Is, Wr, Prj, Prs, Dsc

PART FOUR: Strategies for Teaching

1. Ability to apply problem-solving and discovery techniques to strategies involving the movement exploration approach		
A. Ability to relate knowledge of style and locus of body movement, destination of movement, and similar factors to the solution of a particular problem involving a behavior in the cognitive, affective, or psychomotor domains	A. Given opportunity to participate in a set of guided movement exploration experiences, the trainee will demonstrate ability to relate knowledge of how one moves, what one moves, and where one moves, to the particular goals of the experience.	LAV, Prs, Dsc
B. Ability to examine, weigh, and judge the effectiveness of movement exploration techniques	B. Given opportunity to participate in experiences involving movement exploration, the trainee will examine such experiences on the basis of his own emotional and physical responses.	LAV Prs, Int, Prs

2.	Ability to select and use questioning techniques to promote objectives involving physical education goals in the several behavioral domains	2.	Given a set of instructional tasks involving goals of the physical education program, the trainee will demonstrate ability to select goals for which questioning techniques are appropriate, and to use the techniques in an effective manner.	Is, Wr, Tsg, Tcl
3.	Awareness of the ideal use of strategic interactions in promoting objectives of the physical education program	3.	Given a set of instructional tasks, the trainee will demonstrate awareness of the use of strategies to bring out creative cognitive responses, encourage good performance through guidance, promote good standards through discussion, and require vigorous action and evidence of thinking on the part of participants.	Tsg, Tcl, Tt, Int

LANGUAGE ARTS

GENERAL AND ENABLING OBJECTIVES	PROTOTYPE TEACHER BEHAVIORS	EXPERIENCE (Codes)
I. Listening		
1. Knowledge of the kinds of listening: passive or marginal, appreciative, attentive, critical, or analytical	1. Given video tape presentations of the four kinds of listening, the trainee will identify them and describe how they meet these qualifications.	Cmp,Smo, Let,Dsc, Prs
2. Comprehension of the purposes for listening, information, pleasure, sensory experiences	2. Given recording presentations of the various purposes for listening, the trainee will identify them and describe how they meet the qualifications.	IS,SmO, LAV,Lct, Dsc
3. Knowledge of and ability to apply listening skills: following sequence, drawing inferences, using context clues	3. Given a lecture, the trainee will, by means of paper and pen, demonstrate the use of specific listening skills.	Lct,Dsc, Prs,Int, Wr
4. Ability to assess and analyze materials and methods used in providing listening experiences	4. Given a video tape presentation of a classrrom listening activity, the trainee will assess and analyze the effect of material and methods for meeting a specific objective.	Dsc,Ocl, SmO,SmP

2

5. Knowledge of and ability to use a variety of media in providing experiences in listening	5. Given a pupil purpose for listening, the trainee will describe three possible media on paper for developing that purpose and utilize one in a micro-teaching situation.	IS,Cmp, LAV,Lct, Prs,SmO, Smp
II. Oral Expression		
1. Knowledge of the sequential order of speech development	1. Given a set of ten cards representing various stages of speech development, the trainee will order them in sequence.	IS,Cmp, Lct,Dsc
2. Knowledge of the levels of speech usage: homely, informal, formal, literary, and technical	2. Given tape presentations of the five levels of speech usage, the trainee will identify and describe how they meet these qualifications.	IS,Cmp, Lct,Ocl, SmO
3. Knowledge of the common speech disorders: articulation, stuttering, voicing problems, lisping. . . and identify children needing referrals	3. Given video tape presentations of common observable speech disorders, the trainee will identify and make recommendations for referrals for diagnosis.	Int,LAV, OO,Tt

4. A comprehension of and the ability to apply functional objectives for oral expression such as giving directions, explanations, and storytelling	a. Trainees will, on video tape, tell a story and analyze the tape in terms of interest and effectiveness.	LAV,Dsc, Prs,Prj, SmO
	b. Given a worksheet, the trainee will give directions on tape and analyze them in terms of clarity and effectiveness.	
5. Knowledge of a variety of media in providing meaningful experiences in oral expression, such as: dramatization, choral reading, poetry	5. Given a lesson or unit to plan, he will list several and employ at least two types of media appropriate for the activity he has planned.	IS,Cmp, Lct,Prs, SmO,SmP
6. Ability to construct criteria for evaluation of oral expression	6. Given a video tape presentation of an activity involving oral expression, the trainee will construct a criteria for evaluation.	IS,Cmp, LAV,Lct, Int,SmO, Tt

III. Written Expression		
1. Ability to apply a standard form of handwriting	1. Given a selection to copy he will demonstrate on the chalkboard and on paper proficiency, legibility, and neatness in using a standard form of writing.	IS,LAV
2. Knowledge of the sequential development of handwriting instruction: manuscript, transitional and cursive	2. Given paper and pencil, he will describe the sequential development of handwriting instruction and teach a lesson in manuscript, transitional and cursive handwriting.	IS,LAV, Prs,Ocl
3. Knowledge of and ability to prescribe for the special individual needs involved in handwriting such as: position, lighting, left-handedness, coordination, and vision	3. Given a film, depicting a handwriting class, the trainee will identify and prescribe for problems with right and left-handedness, poor coordination and vision problems.	LAV,Lct, Dsc,Ocl, SmO
4. Knowledge of purposes for written expression such as: writing to serve various uses, self-expression through language	4. Given paper and pencil, the trainee will name eight purposes for written expression.	IS,Wr, Lct,Dsc

5. Knowledge of major classifications of language usage, such as: homely, informal, formal, literary, and technical	5. Given eight samples of writing, the trainee will classify them into the five major catagories: homely, informal, formal, literary, and technical.	IS,Cmp, Lct,Dsc
6. Knowledge of and procedure for developing rhetorical skills such as: sentence definition, sentence patterns	6. Given a specific instructional task, he will devise a lesson plan for instruction in sentence structure.	Wr,Int, Lct,Ocl
7. Knowledge of and procedures for developing punctuation and capitalization skills	7. Given a specific instructional task, he will devise a lesson plan for instruction in capitalization and punctuation.	IS,Cmp, Wr,Int, LAV
8. Knowledge of a variety of procedures for teaching spelling, such as: phonics linguistic, word lists, etc.	8. The trainee will describe four procedures for spelling instruction and demonstrate the use of three.	IS,Dsc, Prs,Prj, Ocl,SmO, Tsg
9. Knowledge of the various forms of written expression such as: letters, reports, outlining, original writing	9. Given three forms of written expression, the trainee will construct lesson plans for instruction in each.	IS,Lct, Dsc,Ocl
10. Knowledge of situations which require written expression	10. Given a specific form of writing, the trainee will name three to five situations which would require the use of the particular form.	Dsc,SmP, Ocl,Tsg

11. Ability to evaluate specific aspects of written expression	11. Given a sample of a student's writing, the trainee will write an evaluation of the following factors: (1) mechanics of writing, (2) choice of subject, its development, organization and form, (3) quality of sentences, and (4) grammatical usage.	Dsc,Wr, IS,Tsg
12. Ability to proofread work of self and others	12. Given a sample of writing containing common errors, the trainee will identify and correct errors.	Cmp,Tt, Tsg
IV. Language Development		
1. Knowledge of children's language development from infancy to adolescence	1. Given a set of characteristic stages of language development, the trainee will order them in sequence.	IS,Cmp, LAV,Dsc, Ocl
2. Knowledge of word derivation in the English language	a. Given a paragraph, the trainee will identify native and borrowed elements of language. b. Given ten words selected from an appropriate dictionary, the trainee will describe the evolution of the words with respect to changes in spelling, pronunciation and meaning.	IS,Cmp, Lct,Dsc, Prj

3. Knowledge of semantics and the structural units of language: phonology, morphology, and syntax	3. Given five selected sentences, the trainee will analyze the words with respect to phonology, morphology, syntax, and semantics.	IS,Cmp, Lct,Dsc
4. Knowledge of the four linguistics: historical, formal, structural, and generative-transformational	4. Given paper and pencil, the trainee will name and describe the four linguistic grammars.	IS,Cmp, Lct,Prj, Wr
V. Reading		
1. Knowledge of the nature of reading and the reading process such as: reading as a skill development, as a visual act, as a thinking process	1. Given paper and pencil, the trainee will identify characteristics of the reading process as skill development, a visual act. . .	IS,Wr, Ocl,Lct, LAV
2. Knowledge of the historical period of reading instruction in America	2. Given pencil and paper, the trainee will give a brief summary and list the main methods and materials of each historical period.	IS,Wr, Lct,Prs, Prj
3. Knowledge of criteria for prereading readiness	a. Given a variety of data on a child, the trainee will identify factors which are indicators of reading readiness: physical, mental, social, and emotional.	IS,Dsc, Ocl,LAV

	b. Given pencil and paper, the trainee will list and describe three methods for diagnosing reading readiness, i.e. reading readiness test, general-ability or intelligence test, and directed observation.	
4. Knowledge of and the ability to use techniques for developing prereading readiness	4. Given diagnostic data on readiness levels of a child, the trainee will describe specific activities and media for developing readiness.	Dsc,Ocl, LAV,Int, Prs,Prj, Tt,Tsg
5. Ability to identify the various approaches to reading such as: basal reading, individualized reading, linguistic approach, Joplin	5. Given video tape presentations of various reading methods, the trainee will describe the main characteristics and list appropriate materials of each.	IS,Cmp, LAV,Lct, Ocl,SmO
6. Ability to evaluate effectiveness of reading approaches on the basis of research evidence	6. Given research data, the trainee will compare different reading approaches for the purpose of evaluating effectiveness of each.	IS,Wr, Lct,Dsc
7. Ability to use different approaches to reading such as: basal, individualized, and linguistic	7. Given a simulated teaching situation, the trainee will demonstrate two approaches and describe a third.	LAV,Prs, SmO,SmP, Tt,Tsg, Tcl

8.	Knowledge of materials available for different levels for teaching reading, such as: SRA Labs, programmed materials, controlled readers, and phonics game kits	8.	Given several reading levels, the trainee will describe appropriate reading materials to be used at each level.	IS,Wr, LAV,Dsc, SmO
9.	Ability to use materials for teaching reading such as: SRA Labs, programmed materials, McMillan Reading Spectrum	9.	Given a simulated teaching situation, the trainee will demonstrate the use of three different sets of materials.	LAV,Prs, SmO,SmP, Tt,Tsg, Tcl
10.	Ability to assess materials as to sequence of skills taught such as: vocabulary, phonic analysis, structural analysis, comprehension skills	10.	Given three or four types of materials, the trainee will list the sequence of skills in each.	IS,Wr, LAV,Lct, Dsc
11.	Ability to utilize instructional protocols appropriate to the several skill areas	11.	Given an instructional objective in each of the major skill areas, i.e. vocabulary, comprehension, phonic and structural analysis, the trainee will demonstrate a procedure for instruction in each to small groups of children (micro-teaching).	IS,Wr, LAV,SmO, Dsc,Ocl

12.	Knowledge of and the ability to use techniques for assessing reading levels of children: independent, instructional, frustration, and potential	12.	Given a small group of children, the trainee will assess their present reading levels by using: a. group or individual achievement tests, b. informational reading inventory.	IS,Tt, Wr,Ocl, Prj,SmO
13.	Knowledge of and the ability to use diagnostic and corrective procedures	13.	a. Given a child identified as having reading difficulties, the trainee will determine the nature of the difficulties by using formal and informal diagnostic tests such as: Keystone Tele-binocular, Durrell Analysis of Reading Difficulty, Personality Inventory, and School Records b. Given diagnostic information on a child, the trainee will describe a corrective procedure for instruction.	IS,Wr, Prs,Prj, LAV,Ocl
14.	Knowledge of and ability to instruct in children's literature	14.	Given ten children's books, the trainee will write a brief evaluation of each using such criteria as: interest, sex, readability, literary quality. .	IS,Wr, Int

15. Ability to utilize protocol effective for stimulating interest in literature such as: reading aloud, audio-visual media, room library	15. Given a micro-teaching situation, the trainee will utilize a particular method with a small group of children for the purpose of stimulating interest in specific literature. (Effectiveness of method may be roughly measured by the children's selection of books.)	LAV,Dsc, Prs,Ocl, SmO,SmP, Tsg
16. Knowledge of skills required for reading in the content areas: a. skills common to all content b. skills specific to particular content	16. a. Given a chapter each from two different content areas (social studies and math), the trainee will select words and/or passages from each that require the use of five common reading skills: i.e. use of dictionary, verbal clues, establishing purpose, . . . b. Given specific content areas, the trainee will list three skills specific to each content: developing specialized vocabulary and concepts, use of scientific method.	IS,Wr, Dsc,Ocl
17. Knowledge of and ability to apply readability formuli to content areas	17. Given a passage from a specific content area, the trainee will determine the readability level by applying one of the commonly used readability formuli such as Lorge, Dale-Chall, Flesch.	IS,Cmp Lct

18. Knowledge of and ability to instruct in library skills	18. a. Given a list of library skills, the trainee will order them in learning sequence. b. Given a choice of basal, individualized or programmed materials, the trainee will select one and develop an activity using library skills that will correlate with instruction in selected material.	IS,Cmp,Wr,Dsc,Prj
19. Ability to use the library and the librarian as a resource	19. Given an instructional task, the trainee will describe five ways the library and the librarian may be used as a resource.	Int,IS,Wr,LAV,Ocl
VI. Special Concerns		
1. Knowledge of the abilities and limitations of the gifted, the disadvantaged, and bilingual child, and the child with vision and hearing problems	1. Given a case study of a child with a special need, the trainee will analyze the effect of his special abilities and limitations on his academic achievement.	IS,Cmp,LAV,Lct,Dsc,Wr,Ocl
2. Knowledge of the varied language characteristics of the children with special needs such as disadvantaged, bilingual, child gifted in	2. Given pencil and paper, the trainee will describe three to five language characteristics of the disadvantaged, bilingual, gifted child, and	

language, and child with a hearing problem	child with a hearing problem.	IS,Cmp, Dsc,Prj
3. Knowledge of the factors which influence learning and language development of the gifted, disadvantaged, and bilingual	3. Given paper and pencil, the trainee will list three to five factors influencing the language development of the gifted, disadvantaged, and bilingual child.	IS,Cmp, Dsc,OO
4. Knowledge of and ability to adjust techniques and procedures for teaching children with special needs	4. Given a lesson plan for a specific learning activity, the trainee will make necessary adjustments for the area of special need.	IS,Wr, Ocl,Tt, Tsg
5. Ability to identify and meet needs of child with hearing loss	5. Given a real or simulated classroom situation, the trainee will identify characteristics and prescribe for a child with a hearing loss.	IS,Ocl, OO,SmO, SmP

SOCIAL STUDIES EDUCATION

GENERAL AND ENABLING OBJECTIVES	PROTOTYPE TEACHER BEHAVIORS	EXPERIENCES (Codes)
1. Comprehension of a current approach to analysis of social science curriculum based on the use of generalizations		
A. Knowledge of the rationale on which the approach is based	A. Given an oral or written project designed to determine knowledge of such an approach, the trainee will respond at an adequate performance level .	IS,Prj, Wr, Prs, Dsc
B. Knowledge of and ability to use a system for ordering generalizations, main ideas and key concepts in the social studies	B. Given a descriptive list of social science generalizations, main ideas, and key concepts, he will order them according to level of specificity, identifying higher and lower order generalizations, main ideas, key concepts, etc.	IS,Dsc, Wr
C. Knowledge of and ability to use a system for selecting the generalizations, ideas, and concepts which are appropriate for a given	C. Given a descriptive list of social studies topics, he will choose from among a designated set of generalizations, ideas, and concepts those which relate to each	IS,Wr, Dsc

social studies topic at the elementary level	to each topic on valid logical and phychological grounds.	
D. Knowledge of and ability to use a system for determining the knowledge, abilities and attitudes involved in development of a key concept in social studies	D. Given a descriptive list of abilities and attitudes, he will identify those which a pupil needs to possess or acquire in order to develop each of the key concepts related to a selected set of generalizations.	IS,Wr Dsc
2. Ability to formulate objectives suitable for use in planning the development of social science generalizations appropriate to an elementary school social studies curriculum		
A. Ability to relate generalizations to a given topic	A. Using a given set of curriculum elements, he will determine the appropriately related topics and generalizations.	IS,LAV, Wr,Dsc, Prj
B. Ability to formulate and select the lower order generalizations, main ideas, and key concepts which relate to higher order generalizations	B. Given a set of higher order generalizations, he will formulate and select the Subordinate elements.	IS,Dsc

C. Ability to analyze social studies concepts in terms of the pupil abilities and attitudes involved in their development	C. Given a list of key concepts, he will determine the student behaviors involved in their development.	IS,Dsc, Prj
D. Ability to apply knowledge of child growth and development as related to expected competencies and behaviors of children at a variety of levels in the area of social studies goals	D. After observing or interacting with a given set of children and analyzing evaluative data relating to developmental level of the children, he will predict performance of the children on specified tasks in social studies with some degree of accuracy.	Ocl,SmO Int,LAV, Dsc
E. Ability to formulate instructional objectives relating to social studies, using behavioral terms, and utilizing topics appropriate to a given elementary school level	E. Given a project to develop objectives for a given teaching situation, he will formulate goals in terms of pupil behaviors, utilizing appropriate topics.	IS,Wr Prj,Int
3. Ability to select and organize content which can serve as an appropriate vehicle for the development of social studies objectives		

A. Knowledge of and ability to apply those modes of inquiry used by the social scientist which are suitable for social studies in the elementary school	A. Given a set of materials in which modes are illustrated, he will determine which are suitable for use in elementary school, and develop appropriate adaptations for use with a given topic.	IS,Wr, LAV,Prj
B. Comprehension of and ability to use a taxonomical retrieval system of social science generalizations	B. Given a system such as the Storage Retrieval System for Social Science Generalizations by Adair and Barbe (1965), he will use the system in the retrieval of appropriate material for a given set of topics.	
C. Knowledge of a variety of curricular materials and sources of material, and ability to organize effectively content obtained through their use	C. Given a set of instructional objectives, he will participate in a project to select and organize materials for a given group of children.	IS,Wr LAV,Prj, Dsc
4. Ability to select and implement teaching strategies appropriate for the development of social studies objectives		

A. Ability to select and implement strategies related to development of cognitive skills	A. He will plan and carry out strategies designed to develop pupil's abilities in areas such as the following:	
	(1) Locating information on maps, globes, charts, graphs, in films and filmstrips, and from pictures and models,	
	(2) Locating information in written references, sources and a card catalog,	
	(3) Interpreting, analyzing, and synthesizing information from a variety of sources,	Wr,Int, LAV,Dsc, Tt,Tsg
	(4) Applying techniques of inferential thinking and generalization where such are indicated, in both familiar and unfamiliar settings,	
	(5) Analyzing inferences and generalizations by examining supportive data, relevance, and data source,	
	(6) Evaluating data credibility and feasibility of inference in terms of a specific geo-cultural setting.	

D. Ability to select and implement strategies designed to promote social studies objectives in the affective domain	B. He will plan and carry out strategies designed to promote pupil behavior such as the following: (1) Listening attentively to the contributions of others, (2) Identifying and presenting his own point of view with increasing clarity, supported by firm data, (3) Reconsidering, refining, and redeveloping his position as new ideas, discrepant evidence, or other pertinent feedback becomes available, (4) He will identify a variety of techniques which can be employed to diagnose individual needs in the affective domain, and suggest appropriate treatment techniques and procedures .	IS,Ocl, Wr,LAV, Tt,Tsg, Int

C. Ability to select and specify the appropriate non-personal media, and to implement strategies involving their use in interactions of pupils with content through media	C. Given a period of responsibility for selecting or specifying media, he will describe and apply criteria such as the following: (1) Individual differences of pupils are provided for, (2) Medium or media chosen is suited to both content and learning styles, as well as teaching conditions, (3) Material is best available in terms of quality, contemporary nature, suitability, etc.	IS,Wr, Int,Prj, LAV
	Given a period of responsibility for implementing strategies involving use of non-personal media, he will arrange the learning environment in such a way as to facilitate the kinds of activities desired, attending to such matters as equipment placement, pupil group organization, and so forth.	Wr,LAV, Tt,Tsg, Tcl

D. Ability to develop, produce, and assist in the productions of non-personal media for use in social studies	D. Given a period of responsibility for developing, producing, or assisting in the production of media equipment or material, he will demonstrate ability to do so under conditions such as the following: (1) When demonstration of a technique is necessary in order to direct pupils in their efforts to create something; (2) When no existing material is available which is suitable for a particular teaching task,	LAV,Tt, Tsg,Tcl, Int,Wr
5. Ability to specify the sequence of learnings and the form of analysis to be employed in evaluating pupil behavior resulting from the learning experiences, and to evaluate learning outcomes on the basis of pupil behaviors	5. He is able to indicate the techniques which will be used to identify pupils entry skill prior to the introduction of new content.	IS,Wr, LAV,Ocl
	For each assignment or task incorporated into the ensuing lessons (e.g. maps, charts, graphs, notebooks, artwork.) He is able to stipulate the performance criteria to be employed,	LAV,Int
	For each assignment or task he is able to indicate how individual needs will be diagnosed and incorporated into subsequent planning.	Int,Is, Ocl,Wr

	Given a period of teaching responsibility, he will use a variety of evaluative techniques to determine learning outcomes in terms of pupil behaviors.	IS,Wr, LAV,Cmp, Tt,Tsg, Tcl
6. Ability to interconnect and interrelate individual lessons within a unit, and to provide similar continuity between individual units	6. He is able to employ the evaluation of the previous lesson(s) in making plans for subsequent lessons.	Int,Wr, Tsg
	He is able to provide for individual differences at this time.	Int,Wr, Tsg
	He is able to insure that subsequent lessons build on the learnings of those taught previously.	Int,Wr, Tsg

ART EDUCATION

The skills and knowledge objectives are presented in five parts, each bearing a relationship to the others. The first objective (Ability to perceive phenomena of which art work is composed) acts as a foundation for the other four areas, each of which deals with a particular part of the skill-knowledge structure: the artist model (producing art); the art historian model (knowledge of historical contexts of art); the art critic model (evaluating art); and the art teacher-learner model (knowledge of and ability to apply art education theory.) The second, third and fourth parts are dealt with separately only for purposes of designating unique contributions of each to the total art skill-knowledge structure.

The fifth part, which deals with teaching behaviors, requires that a trainee integrate behaviors outlined in the other sections, and, in addition, draw upon other disciplines such as sociology, psychology, etc. to accomplish the full integration of values and theoretical knowledge which he will apply in the classroom in the planning implementing and evaluating of art experiences for students.

The material in this section presupposes retention of entry skills and knowledge outlined in Appendix J. Experiences in the pre-service program will refine and build upon the competencies identified in each of the first four areas described above, and will add the professional dimension required by the program.

Part I: High level perception of art phenomena

GENERAL AND ENABLING OBJECTIVES	PROTOTYPE TEACHER BEHAVIOR	EXPERIENCE (CODE)
1. Ability to discriminate among details (art elements): lines, shapes, textures, colors, columns, spaces, planes	1. Given a full-color reproduction of Botticelli's "Adoration of the Magi," the trainee, upon request, will ostensibly isolate linear elements and verbally describe their qualities (as, smooth-flowing, curved, delicate,etc.).	IS,LAV, Dsc,Lct, Prj,OO
2. Ability to discriminate among gradations of each such detail (art elements): hue to hue, light to dark, bright to dull, small to large, opaque to transparent, rough to smooth	2. Given 20 Munsell color chips, the trainee will: A. arrange them from lightest to darkest indicating whether they are shades or tints; B. arrange them from lowest to highest intensity, identify the color by name; and C. arrange them chromatically and identify by name.	IS,LAV, Dsc,Lct, Prj,OO

	Given a black and white photograph of a still-life, the trainee will reproduce it in tempera paint, breaking the values down to black and grays only.	IS,LAV, Dsc,Lct, Prj,00
3. Ability to discriminate similarities and differences in terms of items in Nos. 1 and 2, above	3. Given three pieces of textile prints in color, the trainee will name and describe: A. a common compositional configuration; and B. stylistic qualities unique to each one.	IS,LAV, Dsc,Lct, Prj,00
4. Ability to discriminate configurations or structures of Nos. 1, 2 and 3 (above): simplicity vs. complexity, closed vs. open, etc.	4. The trainee will make a pencil drawing based on a given still-life: A. where the composition is symmetrical; and B. where the composition is asymmetrical.	IS,LAV, Dsc,Lct, Prj,00
5. Ability to discriminate thematic and stylistic qualities: romantic vs. genre, Baroque vs. Rococo,painterly vs. linear, etc.	5. The trainee will make two black and white paintings based on a still-life: A. to be painterly in style;and B. to be linear (hard edged) in style.	IS,LAV, Dsc,Lct, Prj,00

Part II: Knowledge of art production (the artist model)

GENERAL AND ENABLING OBJECTIVES	PROTOTYPE TEACHER BEHAVIORS	EXPERIENCE (CODE)
1. Ability to recognize and accept art as a realm of experience by:		Int, IS, LAV, Dsc, Lct, Prj, Prs, Ocl, OO, SmP, SmO
A. engaging in critical dialogue on the subject of art	A. The trainee will present a summary description and critique of an art show indicating the possible value to be gained by attending that show.	
B. attending art museums, galleries, exhibits of works, etc.	B. The trainee will make a report of the art museum and gallery shows he has visited citing the scope of art he has viewed together with a description of major differences in art qualities of certain works in the displays.	
C. reading material on art such as books, magazine articles and critic's reviews	C. The trainee will list the artists, art works and/or art developments covered in articles in current periodicals and newspapers and elaborate and clarify the content of each.	

2. Ability, in producing a work, to engage in a process reflecting the kinds of choices made by an artist, including:		Int,IS, LAV,Dsc, Lct,Prj, Prs,Ocl, OO,SmP, SmO
A. conceiving and conveying an idea	A. Given the assignment of creating a mural for a particular wall in a building, the trainee will do five (5) or more thumbnail sketches making verbal notes on strengths and weaknesses of each;	
B. selecting and using a medium (media)	B. he will select an idea to work into a finished comprehensive for the mural and decide on an appropriate medium giving reasons for these decisions; and	
C. exploring and refining the structural and expressive means appropriate to the idea	C. he will complete the finished comprehensive (criteria to be developed) and, critize it verbally for structural and expressive strengths and weaknesses.	

Part III. Knowledge of art with a historical context of information (the art historian model)

GENERAL AND ENABLING OBJECTIVES	PROTOTYPE TEACHER BEHAVIORS	EXPERIENCE (CODE)
1. Knowledge of the scope and sequence of the significant periods of art history such as historic Western tradition, Near and Far East, various primitive cultures and 20th century world view, including:		IS,LAV, Wr,Dsc, Lct,Prj, Prs,OO
A. The recognition that an artist is an individual in relation to his culture, society and contemporary influences	A. The trainee will make a verbal and visual presentation on a given artist describing how his contemporary culture influenced his work.	
B. The recognition that an artist is a contributor to a continuing stream of culture	B. Regarding the Pietas of Gruenewald, Michelangelo and Dali, the trainee will prepare a research paper on the influence of the artist's culture on his work.	

C. The recognition that the artist is an originator and an agent for change	C. Given the same art works as mentioned above, the trainee will prepare a research paper on the characteristics of the works that are unique. The teacher will indicate original contributions to art made by the artist.	IS,LAV, Wr,Dsc, Lct,Prj, Prs,OO
D. The recognition of significant artists and their works	D. On a slide examination, the trainee will identify the artist and date the work or name the art period to which it belongs: (1). Michelangelo's Sistine (center frame) (2). Monet's "Water Lily" (3). Picasso's Guernica	
E. The recognition and description of art styles (schools and individual) in a historical context	E. The trainee will match the following works with the school to which it belongs and describe its style (as painterly, linear, genre, etc.).	

	(1) diChirico's "The Anguish of Departure" — cubism (2) Braque's "Ace of Cubes" — pop art (3) Segal's "The Dry Cleaning Store" — surrealism (4) Seurat's "The Grande Jatte" — post-impressionism	
2. Basic knowledge of the basic historical inter-relationships between visual arts and the other arts such as, drama, poetry, dance, etc.	2. Regarding Beethoven's 5th Symphony, Rodin's "Thinker" and Gericault's "Raft of Medusa," the trainee will write a description of the similarities and differences with respect to formal and thematic consideractions.	IS,LAV, Wr,Dsc, Lct,Prj, Prs,OO
3. Basic knowledge of the historical inter-relationships between the visual arts and other fields such as the social and physical sciences	3. Regarding the architect, the industrial designer and the potter, the trainee will research and report on the scientific aspects of their work (Example: architect as engineer, potter as chemist).	IS,LAV, Wr,Dsc, Lct,Prj, Prs,OO

Part IV. Ability to make reasoned and critical judgments about the significance and quality of works of art (the art critic model)

GENERAL AND ENABLING OBJECTIVES	PROTOTYPE TEACHER BEHAVIORS	EXPERIENCE (CODE)
1. Ability to distinguish between art and non-art	1. Given slides of a sunset, a Durer woodcut, a Khafre statue, a sunflower, an egg, Van Gogh's "Sun-Flowers," Telstar, an XKE, an ancient Peruvian clay figurine, a Voulkos ceramic bowl and a ceramic coffee cup, the trainee will list as art or non-art with supporting reasons.	IS,Wr, Dsc,Lct, Prj,Prs
2. Ability to distinguish between fine art, craft art, and industrial design art	2. Gives above slides, trainee will list as fine art, craft art, or industrial design art with supporting reasons.	
3. Ability to identify relationships between fine art, craft art, and industrial design art	3. Given the last three slides (above), the trainee identifies two similarities and two differences among them.	
4. Ability to describe "local" (particular), "regional" (components), and "whole" (pervasive) properties of qualities of art works: medium, process, subject, use or purpose (in case of utilitarian objects), style, configuration, symbolism (if any)	4. Given a color reproduction of Hick's "The Cornell Farm," the trainee will write: A. an analysis of the composition or structure B. an analysis of the style	

5. Ability to interpret and explain the art work (fine, craft, industrial) recognizing that there are different positions in this respect, as: use of universal vs. relative criteria and differing experiential background of viewer	5. Given a reproduction of David's "Death of Socrates," the trainee will give three interpretations differing in level and/or kind. For each he will elaborate and clarify by referring to a description of the work.	IS,Wr, Dsc,Lct, Prj,Prs
6. Ability to make critical, reasoned judgments of art works and explain criteria used (See No. 4 above)	6. After reading critiques of art works by different professional critics, the trainee will: A. Identify criteria used by each; B. compare/contrast criteria used by each; and C. provide own critique stating criteria used.	IS,Wr, Dsc,Lct, Prj,Prs

Part V. Knowledge of and ability to apply art education theory
(the teacher-learner model)

GENERAL AND ENABLING OBJECTIVES	PROTOTYPE TEACHER BEHAVIORS	EXPERIENCE (C)DE)
1. Knowledge of the relationship between relevant art education theory and classroom activities and ability to apply such knowledge		IS,LAV, Wr,Dsc, Lct,Prj, Ocl,OO Smo,SmP, Tcl,Tsg, Tt
A. Knowledge of development of vision, motor control, cognition, and self concept as these affect ability to master art learnings on the part of the child, including:		
(1) Process through which the child creates his art product	(1) Given several children's drawings of themselves, the trainee will arrange them so as to indicate kinds of sequential development indicating in each instance reasons for such placement. (e.g., cognition, psychomotor).	

(2) The child's expanding vocabulary as it relates to concept formation	(2) Using description of stages of intellectual development as a basis, the teacher will draw implications for ways of developing the child's art vocabulary.
(3) The child's ability to participate in critical dialogue about art (his own and others)	(3) Selecting an art work, the trainee will demonstrate how to involve children in critical dialogue. The trainee will view the videotape of his performance which he will evaluate citing strengths and weaknesses.
B. Ability to define a behavioral task in art and establish behavioral goals that lead to such learning, in areas such as:	
(1) the making of art	(1) Given an area to teach, as making of prints with scrap materials, the trainee will be able to write a series of behavioral objectives.

(2) the seeing and understanding of art	(2) Given an area of teaching, as prints (mono, scrap, potato, linoleum) the trainee will write a series of behavioral objectives that enable him to satisfy the goal of seeing and understanding art.	
C. Ability to select and use media which are appropriate to use for art activities in the classroom		
(1) Manipulative media, as clay, paper, paint, ink, wood, yarn, string, linoleum, etc.	(1) Given four typical media for elementary school, as clay, paint, construction paper, and crayon, the trainee will describe the processes which might be developed out of these for 2nd, 4th, and 6th grades.	
(2) Visual media and equipment	(2) Given a lesson in which the children are to learn about the South West American Indian, the trainee will list	

	the visual media and equipment to be used to facilitate perceptual cognitive learning and explain how they will be used.	
(3) Visual-verbal media, as books, magazines, slide tape	(3) The trainee will write a critique of a series of art-history-oriented books for children (example: Glubok,1965) explaining criteria used and indicate how he will use them in class.	
(4) The community as an environment	(4) Given the problem where the concept of shelter is to be taught to children, the trainee will select four community building structures for this purpose and explain why these are appropriate for this learning situation and indicate how they will be incorporated into the study.	
D. Ability to devise strategies through which art learning may be induced		

(1) The planned curriculum	(1) Given the subject of drawing, the trainee will plan scope and indicate a sequence of activities over a period from Grade 1 through Grade 6 that will lead to the final objective of independent or unique style in drawing ability including representational.	
(2) The planned lesson or experience	(2) Given the behavioral goals stated in printing (B, above) the trainee will plan a series of 3 art lessons related to the goal and carry them through in teaching.	
(3) The larger environment: aesthetics of the classroom itself	(3) Given the situation, immediately above, the trainee will plan and make a bulletin board display and indicate how this will add to learning already taking place.	

E. Ability to evaluate children's learning in art and communicate such information to children, fellow teachers, parents and school administrators, in the areas of:		
(1) Learning in making art	(1) Prepare for parents a layman's explanation of a perception-delineation theory (McFee, 1961) in such a way that parents may better understand their children's art.	
(2) Learning to see and understand art	(2) Develop test items to ascertain the visual perceptual and conceptual response of children to an art object; give the test, summarize responses and report on the results with implications for further teaching.	

2. Ability to read and comprehend material in the various theoretical disciplines related to art education and continuously check and apply such materials with regard to art classroom activities, including ability to:		IS,LAV, Wr,Dsc, Lct,Prj, Ocl,OO Smo,SmP TcL,Tsg, Tt
A. Read a research report objectively and deduce implications in it for improving instruction in art	A. Given opportunity to study, "Developmental Drawing Characteristics" (Eisner, 1967), the trainee of 6 year old children will be able to evaluate the children's drawings according to Eisner's Base Line Scale and explain the meaning of the distribution of the children's drawing scores on that scale.	
B. Participate in action research in art education	B. The above trainee will provide pupils with certain perceptual experienccs after which he will again ascertain the distribution of the children's drawing scores on the Eisner Base Line Scale (Eisner, 1967) to see what, if any, change has taken place in the base line	

	characteristics of their drawings. He will then interpret the data elicited and, on the basis of it, make plans for next steps in teaching.	
C. Use knowledge of structure of art education as a frame of reference for continuing education toward improving own instruction in art	C. Given the current publications: *School Arts*, the *Instructor* magazine, *Journal of Art Education* and *Art Studies*, the trainee will write a critique citing those innovative concepts which have promise for further development.	

APPENDIX E--REFERENCES

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APPENDIX F

STRATEGIES: ADDITIONAL DETAILS AND PROCEDURES

Material contained herein is provided to clarify details of the specifications for Teacher Behavior Three, outlined in Chapter V. The objective for this behavior is: the teacher will employ appropriate strategies for the attainment of desired objectives.

Descriptions and references are designed to exemplify and suggest rather than to serve bibliographic or restrictive functions.

I. Eight Types of Learning

1. Signal learning. Learning associated with a conditioned response; has an involuntary character, and is typically not under voluntary control.

2. Stimulus-response learning. Learning which involves making very precise movements of the skeletal muscles in response to a very specific stimulus or combination of stimuli.

3. Chaining. Connecting in a sequence two or more previously learned elements of stimulus-response learning.

4. Verbal association. A sub-variety of chaining involving the learning of verbal associates, requiring a series of internal responses probably involving a coding connection; considered to be a separate type of learning because conditions for learning verbal chains are more complex than purely motor-response chains.

5. Multiple discrimination. Learning in which one stimulus is differentiated from another; requires conditions which reduce or prevent interference.

6. Concept learning. Learning which depends on responding to stimuli in terms of abstracted properties.

7. Principle learning. Learning which involves a chain of two or more concepts.

8. Problem solving. Learning which involves the combination of two or more principles; applies to the solution of some problem; formulation of higher-order principles.

Reference: Gagné, R. M. Conditions of Learning. New York: Holt, Rinehart & Winston, 1965. pp. 31-170.

II. Functions of External Learning Conditions

1. Presenting the stimulus. Includes providing external cues, display of objects to assist in making discriminations or establishing connections, and representation of elements in a problem situation.

2. Directing attention and other learner activities. Includes verbal directions in oral or printed form, non-verbal directions such as pointing, and pictured or symbolized directions.

3. Providing a model for terminal performance. Includes oral or printed communications, and action demonstrations.

4. Furnishing external prompts. Includes pictorial, verbal, or other stimuli which serve to establish a proper sequence or connections, and increase the distinctiveness of coding links.

5. Guiding the direction of thinking. Usually in the form of verbal statements and applied to learning of principles or problem solving.

6. Inducing transfer of knowledge. Includes verbal questions or statements, demonstrations, situational problems, etc. applied to concept, principle and problem-solving types of learning.

7. Assessing learning attainments. A function which assists the learner by representing the objective and reflecting successive approximations toward it.

8. Providing feedback. Related to Function 7; helps to reinforce correct responses and extinguish those that are incorrect.

The external conditions, when combined with prerequisite capabilities within the learner, act to bring about desired changes in behavior.

Reference: Gagné, R. M. 1965. pp. 268-271.

III. Selected References on Behavior Modification

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IV. Observation Systems for Functional Reinforcement Procedures

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Thomas, D. R.; Becker, W. C.; and Armstrong, M. "Production and Elimination of Disruptive Classroom Behavior by Systematically Varying Teacher's Behavior." *Journal of Applied Behavioral Analysis*: 35-45; 1968.

V. Types of Non-Personal Media

1. Printed Media. Trade books, textbooks, programmed material, workbooks, worksheets, reading kits, pamphlets, periodicals, newspapers and clippings, reference books (dictionary, atlas, encyclopedia, and almanac).

2. Still and moving pictures (with and without audio). Flat graphics (charts, posters, pupils' pictures, diagrams, wall maps, chalkboard, bulletin board, and flannel board), mechanical visuals (opaque projector, filmstrip projector, silent film projector, overhead projector, filmstrip and slide viewer, rear-screen projector, microprojector), mechanical audio-visuals (television, sound film projector, and filmstrips with synchronized sound).

3. Audio media. Mechanical sound production (musical instruments, phonograph, radio, PA system, earphones, amplifiers, tape recorders with prepared, emerging and programmed tapes).

4. Three-dimensional media. Models, mock-ups, globes, specimens and other realia, toys, games, puppets, sculpture, mobiles, and stabiles.

5. Manipulative and productive media. Laboratory equipment, demonstration apparatus, still and motion picture cameras, and material such as paper, paints, writing and drawing instruments, and clay sand.

6. Miscellaneous multi-media. Teaching machine hardware and software, language laboratories, and dial-access telephone set-ups.

VI. Categories of Verbal Interaction

The following references represent sources which may be used for categorizing kinds of verbal interactions. In some cases, categories and strategies were developed for use with secondary school programs, and would need to be adapted for elementary school use.

Aschner, Mary Jane. "The Analysis of Verbal Interaction in the Classroom." In Arno Bellack (Ed.), Theory and Research in Teaching. New York: Bureau of Publications, Teachers College, Columbia University, 1961. pp. 53-78.

Aschner, Mary Jane; Gallagher, James; et al. A System for Classifying Thought Processes in the Context of Classroom Verbal Interaction. Institute for Research on Exceptional Children. Urbana: University of Illinois, 1965.

Smith, B. O.; Aschner, M. J.; and Meux, M. A Study of the Logic of Teaching. Urbana: University of Illinois, 1962.

Smith, B. O., et al. A Study of the Strategies of Teaching. USOE Project No. 1640, Bureau of Educational Research, College of Education, University of Illinois, 1967.

VII. Prototype Strategies for Teaching Types of Thinking

1. Strategies for teaching divergent thinking. The teacher will reinforce students for the following kinds of verbal statements:

a. Elaborating statements. Either structured or free, building upon a point already made, by means of such verbal techniques as filling out or developing a point by connecting instances or examples; constructing a relationship between ideas by comparisons or analogies; extrapolating beyond the given projections from given data by antecedent-consequent or hypothetical construction to a new point of possibility.

b. Synthesizing statements. Formed by integrating the current central idea with an entirely new point or frame of reference, which may be a variation or reversal of a previous conclusion.

2. Strategies for teaching convergent thinking. The teacher will use questions and reinforcing techniques to elicit from students examples of:

a. Translation by shifting conceptual material from symbolic or figural content to semantic or vice-versa.

b. Associations, involving likenesses and differences, degrees of comparison, and relationship of direction, spatial position, and classification.

c. Explanations for a rational nature explaining why something is the case, or why one thing caused something else.

d. Substantiation of a claim or conclusion by citing of evidence.

e. Conclusion through generalizations arrived at by integrating previous remarks, summarizing through reformulation of serial material or enumerative material from reading or discussion, or through implications drawn deductively from material previously presented.

3. Strategies for teaching cognitive memory. The teacher will demonstrate use of the following techniques, and reinforce students for giving evidence of ability to use them:

a. Spelling of word or term, either orally or in writing.

b. Exemplifying the word, expression or principle.

c. Recapitulating through quoting, repeating, recounting or reviewing.

d. Clarifying by defining meaning, qualifying, or restating in different words.

e. Elaborating by giving factual information, detailing facts, or carrying on a factual monologue.

4. Strategies for teaching evaluative thinking. The teacher will demonstrate and elicit from students verbal patterns which illustrate the following:

a. Explanations of a value nature telling why something is good, bad, useful, important, or beautiful.

b. Justification of a rating, viewpoint, or value-based judgment by giving reasons.

c. Narrative explanations giving a step-by-step account of how something is done, how a mechanism works, or what led to an event or given outcome.

d. Unstructured evaluations, in terms of a scale of values provided either by teacher or student.

e. *Structured evaluations* in terms of probability or an estimate of speculative opinion given or requested as to the likelihood of some occurrence or situation, or in terms of a choice among possibilities.

f. *Qualified judgements* for a modification to a prior value judgement or an effort to make a value dimension more precise.

g. *Counter judgements* directly opposed to the positions of a previous statement.

References:

Aschner, Mary Jane; Gallagher, James; et al. *A System for Classifying Thought Processes in the Context of Classroom Verbal Interaction*. Institute for Research on Exceptional Children. Urbana: University of Illinois, 1965.

Gallagher, James, et al. *A System of Topic Classification: Classroom Interaction Study*. Institute for Research on Exceptional Children. Urbana: University of Illinois, 1966.

VIII. Media Selection Procedure

1. List the behavioral objectives for the course, unit or lesson.

2. For each objective, identify the type of learning involved to determine whether the learning experience is expected to evoke signal learning, stimulus-response learning, chaining, verbal association, multiple discrimination, concept learning, learning of principles, problem solving, or some combination of the above types. (See Gagné '65 for a fuller description of types of learning.)

3. Using the required external conditions of learning as a guide, design a media program for each objective which lists the instructional events, identifies the characteristics of the required stimuli, and states the media options which would be acceptable.

4. Prepare a summary of the media options for a group of objectives making up a sequence of instruction (i.e., one lesson). If an entire unit or course is being prepared, arrange objectives in appropriate sequence, and scan to identify frequently occurring media options.

5. Assign the media in which the instruction would be packaged to achieve the best trade-off with respect to effective stimulus display, convenience if changing from medium to medium, and economy in terms of size of unit in which each sequence is to be prepared or presented in the given medium or media.

6. Investigate available materials to locate satisfactory options; write specifications for the preparation, production, and presentation of material which must be prepared.

Reference:

Briggs, Leslie J., et al. Instructional Media. Pittsburgh: American Institutes for Research, 1967. pp. 28-52.

APPENDIX G

EVALUATION: AREAS OF COMPETENCY IN STATISTICS AND TESTING

Since many trainees, through experiences in underclass coursework, will be familiar to a greater or lesser degree with topics listed below, arrangements should not only be made to provide basic instruction where needed, but also to assure that previously learned skills are reinforced, and that concepts and principles are interpreted in the context of classroom teaching concerns.

It is anticipated that pencil and paper tests, situational tests, and similar instruments will be administered to monitor the extent to which trainees have achieved an appropriate level of skill in comprehension of basic concepts, principles, and statistical techniques used in educational testing. The following set of descriptions outlines the general areas in which skills and knowledge will be expected, and suggests the rationale for planning experiences.

Probability

In order to interpret statistical results in a realistic manner, trainees must recognize the utility of the basic approach of probability theory. Experiences should be aimed at assuring that the prospective teacher is properly oriented to the use of probability techniques and can conceptualize the importance of significance levels, although he need not be required to define terms nor to acquire a high degree of skill in applying principles.

Reliability and Validity

Trainees must demonstrate comprehension of those principles relating to reliability and validity which are useful in evaluating specific learning outcomes in the classroom, and in selecting and interpreting standardized tests. An illustrative list would include such areas as the following:

1. knowledge of sources of unreliability (i.e., inadequate sampling of content, guessing, scorer veriability, temporal factor, etc.);

2. knowledge of methods of estimating reliability cited in test manuals (i.e., internal consistency formulas such as KR-20) and methods which are usable by teachers (as alternate forms, retest, split-halves, etc.);

3. knowledge of methods of increasing reliability;

4. knowledge of current terms used in discussing validity (i.e., predictive, concurrent, construct, and content); and

5. knowledge of methods of estimating and increasing validity of teacher-made tests (i.e., reference to objectives, reference to independent external criteria or judgement, etc.).

Treatment of Test Scores

Ability to recognize terms which may be encountered in the literature and ability to perform some simple operations used in treating test scores are the objectives for the trainee. The following is a tentative list of possible topics:

1. discrete and continuous scores,
2. absolute and comparative measurements,
3. ranking,
4. frequency distribution (frequency tables, histograms, frequency polygons, ogives),
5. measures of central tendency (mean, median, mode),
6. measures of variability or dispersion (range, interquartile range, standard deviation),
7. normal curve,
8. derived scores (Percentiles, deciles, quartiles, percentages),
9. standard scores, z-scores, t-scores,stanines, and
10. scattergram.

Correlation

The trainee will be required to demonstrate ability to manipulate and interpret correlational analyses for purposes related to minimum comprehension of research literature and improvement of skill in classroom evaluative activities. Emphasis in training activities will be upon application to situations encountered by a classroom teacher, and upon development of a proper interpretation of the concepts of correlation as the interrelation between two or more events or conditions.

It must be clearly understood that correlations are simply measures of relationships and do not indicate causality or even influence, but only association. Correlational techniques are generally used when variables under study cannot be experimentally controlled and, as such, are a useful device.

Simple Item Analysis

Areas in which competence is to be demonstrated emphasize knowledge and abilities which will be useful in constructing and evaluating test items, and in evaluating the effects of particular tests and items, especially when tests are prepared for use by teaching teams. Knowledge of item analysis techniques is also useful in interpreting descriptions of standardized tests. The following areas may be included:

1. knowledge of types of items used in essay and objective tests, and

2. knowledge of techniques for discriminating items on the basis of easiness, determining distribution of answers to alternatives, measuring index of discrimination, etc.

APPENDIX H

INSTRUMENTS RECOMMENDED FOR ADMISSION AND SCREENING

The most pertinent information with reference to each of the instruments listed as possibilities for use in the admission and screening of applicants and trainees is provided below. It bears repeating here that: (1) at the outset some of the scores will be used more for research purposes than for admission and screening, (2) as empirical research data becomes available, the instruments found to have little or no predictive value will be dropped and others tried, and (3) locally constructed and standardized instruments more directly beamed at the objectives of the model will replace some of those which have been standardized with other foci.

No specific cut-off scores on any of these instruments can be recommended until empirical data have been tested against performance criteria. At the outset, a committee on admission will have to determine its own basis for making a judgment.

School and College Ability Test (SCAT)

Cooperative Test Division, Educational Testing Service, Princeton, New Jersey, or 4640 Hollywood Boulevard, Los Angeles, California.

General Information. College freshmen and sophomores; 1955; 3 scores: verbal, quantitative, total; IBM, NCS, and Grade-O-Mat; (Level I.) Grades 12-14; Forms IC and ID available only by arrangement for use in college; manual for interpreting ('57, 49 pages); $4 per 20 tests; $1 per 20 IBM scorable answer sheets; $1 per manual for interpreting; 70 minutes.

Scoring System. This test was constructed specifically to aid in estimating the capacity of a student to undertake academic work at the next higher level of schooling. SCAT scores appear to predict academic achievement better among women than among men. The SCAT total score usually predicts English grades better than they are predicted by the verbal score. A correction for chance success is not used in scoring SCAT.

Percentile bands are used for reporting SCAT scores. Mean norms for grades 13 and 14 were not published. The

Manual for Interpreting Scores provides detailed information for constructing local norms. Distribution of the verbal scores is reasonably satisfactory but quantitative scores and the total scores show a negative skew. The mathematical items were considered too easy for this level by one reviewer. IQ's should not be calculated from the scores.

In grade 13 (fall testing) the Individual Score Norms for total scores were: median- 300, lower quartile-290, and upper quartile-307. In grade 14 (fall testing), the median-303, the lower quartile-294, and the upper quartile-310.

Validity. In large samples tested in junior college, the correlations of SCAT with the Otis Quick-Scoring Mental Ability Tests were .77 and .81. There is good evidence for concurrent validity with general intelligence. However, individuals need to investigate the validity of the tests in their own local situations.

Reliability. Research studies concerning the reliability of SCAT are not given. However, the authors report internal consistency reliability for the total test is about .95 for each level. The Kuder-Richardson (formula 20) yields at least .95 reliability for the total score in all grades.

Rationale. This test is being suggested as the major instrument to be used to determine whether or not applicants possess the general ability that will be needed by trainees to complete the academic and professional education components of the model. The instrument is not proposed as a producer of data on the basis of which predictions of teaching success can be made; it stops far short of that. There are attitudes and skills believed to influence teacher effectiveness not measured by this test. It is believed to measure as well as any test available the ability of students to learn facts and gain concepts that will be needed in the model.

The SCAT was selected over the American College Test for three major reasons. First, the research literature indicates that the scores on the SCAT are not likely to be spread over as wide a range as the American College Test. Inasmuch as most institutions which may be concerned with the model will be highly selective on general admission, it is believed that the elimination of only a small percentage that may score low on the SCAT test is all that will be needed at this point in the program. Second, the SCAT is generally regarded as more simple to administer than the American College Test. And third, the research reports indicate that the SCAT scores appear to predict academic achievement somewhat better among women than among men. Inasmuch as a majority of the applicants for the elementary model are likely to be women, a test with a good record for predicting achievement for women is favored. If a committee wishes to select its trainees from the top third of high school graduates, the 50th percentile score for college sophomores should approximate this standard.

Cooperative English Test (1960 Revision, Reading Comprehension Section).

Cooperative Test Division, Educational Testing Service, Princeton, New Jersey, or 4640 Hollywood Boulevard, Los Angeles, California.

General Information. Grades 13-14; reading comprehension (level, speed, total); distribution of Form IC restricted to colleges; manual for interpreting ('60, 42 pages); $6 per 20 copies (single booklet); $1 per 20 IBM scorable answer sheets; 40 (45) minutes per test.

Scoring System. The scores are intended to measure college students in reading ability skills. College norms were based on a very limited sample of students. The test yields one comprehension score which is not much affected by rate and a second comprehension score which is greatly affected by rate. No pure rate measure of words per minute is obtained. Emphasis is placed on percentile rank bands, rather than on single valued estimates of a student's rank. The publisher provides spring percentile rank norms for college sophomores and fall norms for college freshmen.

Validity. One reviewer claimed it should have high predictive validity against the usual criteria of scholastic success. Well qualified people have constructed it. No studies were reported for the 1960 revision concerning predictive validity.

Reliability. The median coefficient is in the .40-.45 range which is consistent with other research in this field. Reliability data are reported only for grades 10 and 12.

Rationale. The Cooperative English Test: Reading Comprehension Section, will be used to supplement the SCAT test in the area of reading ability, especially the ability to comprehend.

The model will place heavy demands upon the ability of trainees to comprehend what they read. The distinctions which the trainees will be called upon to make will require not only high level general ability, but also the ability to comprehend complex statements. This test has been selected because it contains a wide variety of materials to be read and interpreted by the trainee. The results on the different items can be put into the computer and over a period of time, it can be determined which items are the best predictors of the abilities of the trainees to understand the materials to be covered in the model program.

College-Level Examination Program (CLEP)

College Entrance Examination Board, Box 592, Princeton, New Jersey, 08540.

General Information. Grades 13-14; 1965; general examinations, (English, humanities, mathematics, natural sciences, and social studies); each test is 60 or 75 minutes long.

Scoring System. The tests are designed to assess the student's knowledge of fundamental facts and concepts, his ability to perceive relationships, and his understanding of basic principles. It is most frequently used to assess the general educational background of students who have had one or two years of college instruction. Raw scores range from 200-800 with a mean of 500 and a standard deviation of 100 for that group. Free information will be provided for developing local norms.

Validity. The author claims that there is a consistent relationship between the area of intended major and the corresponding General Examination which verifies, to some extent, the concurrent validity of the examinations. There is a consistent relationship between test scores and final course grades.

Reliability. Reliabilities were computed by the Kuder-Richardson Formula 20 adjusted for use with formula scores (rights minus 1/4 wrongs). The reliabilities were found to range from .83-.91 in the five major areas for college sophomores in the spring of 1963. Reliabilities will differ slightly from college to college and from test form to test form.

Rationale. This test has just recently been developed by the Educational Testing Service and is designed to cover the achievement of the first two years of college. The test covers English, humanities, mathematics, natural sciences, and social sciences-history. Obviously, these represent the major disciplines upon which the elementary teacher will draw. The examination is designed to assess the fundamental facts and concepts possessed by an applicant, his ability to perceive relationships, and his understanding of basic principles. It is not intended to measure advanced training in a specific discipline.

The CLEP rather than some other examination is being proposed primarily because it tests the ability of trainees to perceive relationships and to understand basic principles in the subjects covered. It is believed that the data which this examination will reveal will provide excellent materials for placement in the computer. This will be used as the baseline for monitoring the achievement of students in the basic academic fields to be studied by the elementary school teacher. Each examination, and there are five of them, requires approximately 75 minutes to complete.

In addition to its use for monitoring achievement in these academic fields, the test may turn out to be the best measure of general education that is available at this time. If so, it will be used in lieu of patterns of courses to determine whether or not prospective trainees have adequate backgrounds in general education.

Minnesota Teacher Attitude Inventory (MTAI)

Psychological Corporation, 304 East 45th St., New York, New York, 10017.

General Information. Elementary and secondary school teachers and students in grades 12-17; 1951; IBM; Form A (6 pages); manual (5 pages); separate answer sheets must be used; $3 per 25 tests; $2 per 50 IBM answer sheets; 20-30 minutes.

Scoring System. It is designed to measure those attitudes which predict how well the teacher will get along with pupils. Users should obtain their own local norms.

Students in education, as a group, score approximately 30 to 45 points higher than do experienced teachers. Four years experienced secondary teachers make a median score of 23. Graduating education seniors in a secondary program have a median score of 68. There is also evidence that scores cannot be raised by faking.

Validity. Two studies were made and yielded coefficients of correlation of .46 and .60 between the scores on the test and three criteria: principal's estimate, pupil's rating, and visiting experts' rating. Prediction of teaching success has been very difficult. Data show that persons scoring high on the test tend to be better teachers than persons scoring low on the test. Though studies have not validated the test as a predictive instrument, it should prove to be helpful as an instrument for screening applicants for teacher training or beginning teaching, when validated.

Reliability. Split half reliability is .93. Retest reliabilities during early professional courses and the first months of teaching experience are near .70. There is considerable change in the mean score during the college years.

Rationale. The research indicates that this instrument is a better predictor of the relationship between a secondary teacher and secondary children. While the research is not conclusive as to the validity of this instrument, the data indicate that the instrument gives a rough measure of what may be expected in the relationship between an elementary teacher and a group of elementary children. The instrument, therefore, is being recommended not so much as a producer of data to be used in the initial admission of students, but rather as a producer of data to be placed into the computer for the purpose of determining whether or not there is any relationship between this measure and the ability of trainees to learn the behaviors prescribed by the model. The data may also be used to determine the relationship between the scores on this examination and other measures being used in initial admission. In other words, the results of this examination may be useful in testing certain hypotheses as they relate to the learning of the kinds of behaviors prescribed by this model.

Bills Index of Adjustment and Values.

Robert E. Bills, College of Education, University of Alabama, Tuscaloosa, Alabama.

General Information. Adult and high school seniors; Adult form; Manual is 89 pages.

Scoring System. A discrepancy score is given which is the total of the differences between the self-concept and the ideal self ratings. The IAV scores have two meanings: a description of the individual, and a description of his relationship to a group. Undergraduates (1728) from four universities were tested in the college group. The distribution of the scores from the four universities showed no statistically significant differences. The author claims this test is a helpful tool for evaluating curricular and teaching method effects. Research in the relationship of scores on this instrument to teacher behaviors could be useful in the future selection of personnel. A manual (87 pages) for scoring and interpreting scores is available.

Validity. In regard to concurrent validity, statistically significant relationships appeared between the acceptance of self measure of the IAV and both the Philips Attitude Toward Self and Others Questionnaire self score and the total scores on the California Test of Personality. The discrepency score of the IAV showed a small but statistically significant correlation with both the Philips self measure and the Washburne S-A Inventory. At statistically significant levels, people who are high in acceptance of self have more positive traits such as: higher group status, are intellectually more efficient, are more responsible, and participate in more social events. In terms of construct validity, the test as a measure of traits or qualities provides incomplete evidence.

Reliability. Split-half reliability coefficients of internal consistency are available for only a limited number (300) of college students of the 1728 students tested. The University of Minnesota group included all of the 329 freshmen who entered the University in February of 1952. The University of Louisville included all 240 in 8 undergraduate psychology classes. The University of Florida included 196 students from four undergraduate classes. The remainder of the students were enrolled in undergraduate classes at the University of Kentucky.

Rationale. This examination grows out of perceptual psychology. It holds that behavior is consistent with a person's conceptions of the world in which he lives. These conceptions are influenced by several variables, including the needs and values of a person, the presence or absence of threat, opportunities for experience with stimuli, the physiological state of the program, and his beliefs about himself and other people.

The use of such an instrument may appear to be inconsistent with the systems approach which leans heavily on behavioral psychology. That seeming inconsistency may disappear, however, if it is accepted that not all teaching behavior is of equal importance to all teachers in all teaching situations. It may be possible to accept the position that there is a minimum level of basic skills in teaching which all acceptable teachers should reach without insisting that teachers use these skills in uniform fashion. It may be useful to test the hypothesis that once the minimum level of teaching behaviors has been reached, the unique strengths of each trainee should be stressed, and the individual should be given freedom in the selection of the pattern of teaching behaviors best suited to his personality.

As in the case of the MTAI examination, the scores on this examination will, at least at the outset, be used in monitoring the trainees through each of the various components of the model. Periodically, the data on this and other similar measures will be assembled for each trainee and made available for the counseling professor.

Gough-Sanford Rigidity Scales

University of California, Institute of Personality Assessment and Research, Berkely, California.

General Information. College students; 1952; psychological dimensions; included in the California Psychological Inventory and is labeled FX (Flexibility).

Scoring System. In the CPI, the items are scored in such a manner that a high score denotes a non-rigid or flexible individual. One user claimed the 22 items given in the test reflect rigidity in the analytic phase of thinking and in the synthesizing phase of thinking. Rigidity was measured as a variable. There is generally a small correlation between intelligence and rigidity.

Validity. Not available

Reliability. Not available

Rationale. This scale grew out of the work of Milton Rokeach in his study of the open and closed mind. The California F Scale is another instrument of measuring the same general factor of open-mindedness.

The assumption underlying the use of this instrument in the model is that young people as well as older people may possess closed minds. It is assumed that in order to be able to participate effectively in the model program and later to implement the behaviors prescribed as a teacher in the schools, a person will need to be relatively open-minded. The training program will require trainees to depart radically in many respects from their normal patterns of behavior. The instrument is being recommended for inclusion in the battery because it attempts to measure a human trait believed to be closely related to one of the major demands which the model will make of each trainee.

APPENDIX I

ADMISSIONS: SUGGESTED ORGANIZATION PLAN

The following organizational arrangements for initial admission of applicants and later screening of trainees are designed to accomplish two major purposes. First, it is believed that more than one person should be involved in the institution's decision to accept an applicant. The plan provides for group decisions on all matters affecting the status of applicants and trainees. Second, some regular channel should be established whereby an applicant may appeal a negative decision on his request for admission or on his retention in the program. The plan provides for this appeal through an appeals board.

Organizational Structures

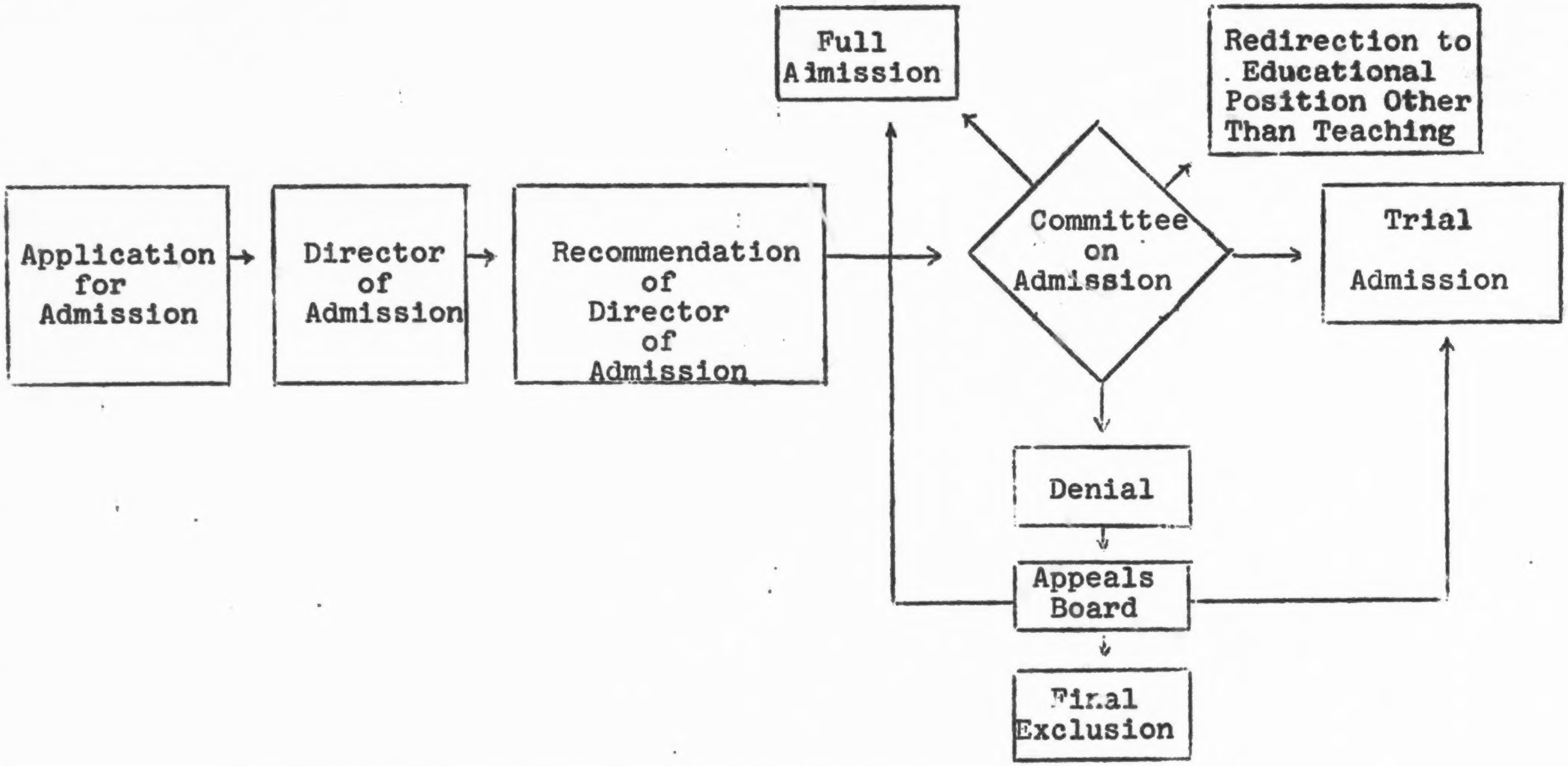
Admission to the model program is seen as separate and distinct from admission to the university. It will come after admission to the university and as the underclass years are completed. Interested students will apply, some will be admitted, some will be counseled toward educational positions other than teaching, and some will doubtless be rejected. Organizational machinery will be needed to carry out such an operation. It is recommended that an organizational structure such as the one shown on the following page be utilized.

Major responsibility for initial admission and later screening should rest with a committee on admission and screening. The head of a department of elementary education may be the most appropriate person to appoint a committee of faculty members to establish policies relating to admission and screening and to implement these policies. The membership could be as follows:

1. The director of admission and screening should be a permanent member of the committee.

2. The chairman of the department of elementary education should be a member, although he will not serve as chairman of the committee.

3. Two faculty members with major assignment in elementary education should be chosen and should be eligible for the chairmanship.


Application for Admission
Director of Admission
Recommendation of Director of Admission
Full Admission
Committee on Admission
Redirection to Educational Position Other Than Teaching
Trial Admission
Denial
Appeals Board
Final Exclusion

ORGANIZATIONAL STRUCTURE FOR ADMISSION TO THE MODEL PROGRAM

Figure A

4. Three persons should be chosen from such areas as psychology, computer science, and subject matter areas bearing directly on the content preparation of elementary teachers as members of the committee and should be eligible for the chairmanship.

The committee may select its own chairman within the limitations prescribed. He should serve as such for a period of no longer than two years. The membership of the committee itself should have suggested terms in order to insure continuity and in order to spread the base of participation. The major functions of the committee would be:

1. to develop policies and procedures relating to admission and screening (reviewed by the interdisciplinary council on elementary education);
2. to make all decisions relating to the acceptance or rejection of applicants and the screening of trainees (except those who may request a hearing before the appeals board as described below); and
3. to review and act on recommendations for the screening of trainees after initial admission.

It will be noted that decisions to accept or deny acceptance to applicants would be made only by the committee on admission and screening. This definition of the responsibility of the committee is meant to relieve a director of admission of this responsibility on an individual basis. It is reasoned that the pressures on the committee will not be as great as would be applied to administrative officers. Furthermore, a committee action is less likely to reflect a single point of view than would inevitably be the case if administrative officers made such decisions.

A director of admission and screening should be the executive officer for the committee on admission and screening. As already indicated, the independent judgment which he would be in a position to make would be somewhat limited. This is not meant to downgrade his responsibilities. As the executive officer of the committee, he would (1) bring forms, instruments, and the like to it. In preparing his recommendations he would analyze the situation, evaluate options, and set forth a rationale to support the recommendations which he would be making to the committee. (2) He would accumulate and organize data with references to each and all applicants and trainees and submit these data with his recommendations to the committee for action. He would not be authorized to make decisions to admit to or to screen a student. (3) He would notify applicants and trainees of the actions taken by the committee on admission and screening, whether those actions are positive, negative, or tenative.

Procedures for Initial Admission

As already indicated, a considerable amount of data should be gathered on each applicant prior to admission. Some of these data will come from the awareness-involvement experiences of the prospective trainees, and other data will come from the records of the institution where the applicant has spent his first two years of college study. All of these data should be made available to the director of admission and organized by him into working sheets for use by the adminissions committee. There could be four of these work sheets: one including the applicants who, in the judgment of the director of admission, should without serious question be admitted to the model program; a second list of those applicants who, in the judgment of the director of admission, would without serious question be excluded from the model program; a third list including the applicants who may be borderline cases; and a fourth list of those applicants who should be redirected to positions in education other than teaching. These four lists should go to the committee during the summer months, at least two weeks prior to the time action would have to be taken. This would give the committee time to study the data on each applicant and decide the questions they would raise when the committee meets to make its decisions. The director of admission should notify the applicants of the actions of the committee before the opening of the fall term. The actions may provide full admission to an applicant, a trial admission to an applicant, a denial of admission to an applicant, or a recommendation for redirecting his choice for training. It is noted in the chapter of staff development that personnel and time must be provided for this activity.

When an applicant is not satisfied with the action of the committee, he may apply to an appeals board for a consideration of his case. When his appeal is being heard, the chairman of the committee on admission should present the data and rationale of that committee, and the applicant should either present his own case or be represented by someone else. The decisions of the appeals board should be transmitted to the applicant by its chairman. That decision should be final. The appeals board should be appointed by the chairman of a department of elementary education. It could consist of five members including two from the regular elementary faculty, one from the department of guidance and counseling, and two from outside the elementary faculty. None of the five should come from the committee on admission and screening.

APPENDIX J--ADMISSIONS: PROTOTYPIC ENTRY SKILLS

The material presented here supplements the discussion of entry skills contained in Chapter VII, ADMISSIONS and SCREENING.

Immediately upon admission to the program, diagnostic procedures will be carried on to determine the individual skill-and-knowledge profile of each trainee. These entry skills, with criterion levels specified, will be identified by specialists in selected areas. A number of data sources will be used, including admissions information, interviews, and instruments developed especially for these diagnostic purposes.

Profiles will be analyzed to determine whether additional preparation is needed in any area. If so, the trainee will then be given opportunity to plan and carry out a program of activities designed to enable him to acquire the requisite knowledge or skill to satisfy criteria in that area. These activities could be carried on concurrently with pre-service phase training experiences for which entry skills criteria have been met.

The task of specifying skills in detail, and of developing instruments and determining criterion levels for each area will be part of a future planning phase. However, for illustrative purposes, the preliminary work done by specialists in three content areas is presented here to exemplify the kinds of approaches which might be used in beginning the task of identifying and diagnosing entry skills. As noted in Appendix E which outlined prototypic programs in selected content areas, this material represents a kind of recapitulation of the work done at various stages in the development of separate phases of the total model program, and is included as a developmental record as well as for purposes of suggesting approaches which might be workable.

HEALTH EDUCATION

GENERAL OBJECTIVES	PROTOTYPE BEHAVIORS	
1. Knowledge of basic structures and functions of the human body	1. The trainee will identify major organs of the body and describe functions of each. He will describe various systems of the body, relating each to total body function.	
2. Knowledge of communicable and chronic diseases	2. The trainee will distinguish between communicable and non-communicable diseases in relation to cause, transmission, prevention, and control.	
3. Comprehension of the physical, psychological and social effects of mood-modifying substances	3. The trainee will identify types of mood and behavior-modifying substances He will describe possible effects of prolonged use of these substances upon the health of the individual. He will distinguish between the habit-forming and addicting potential of various mood-modifiers.	

	He will be able to discuss the social implications of habitual use of mood-modifying substances.	
4. Comprehension of the relationship between mental and physical health	4. The trainee will cite illustrative examples of the effects of emotions upon physical well-being.	
5. Comprehension of emotional, physical and social aspects of marriage and family relationships	5. The trainee will be able to discuss responsibilities and privileges of marriage partners in the establishment of a satisfying and enduring relationship. He will explain conception, prenatal stages of development, and birth process. He will be able to discuss physical and psychological aspects of family planning.	
6. Knowledge of environmental health problems	6. The trainee will identify environmental factors which influence health of individuals in a community. He will describe community measures aimed at their control	

7. Knowledge of accident potential and safety precautions	7. The trainee will cite examples of human factors which contribute to accident hazards. He will be able to apply knowledge of safety practices to reduction of hazards and accidents in problem situations.	
8. Knowledge of nutritional needs of the human body	8. The trainee will be able to identify basic nutrients essential to body growth and health maintenance. He will apply knowledge of basic food essentials to selection of balanced diet.	
9. Ability to relate nutritional practices, rest, and exercise to growth and development	9. The trainee will be able to explain the contribution of adequate exercise and rest to physiological and emotional well-being. He will explain the relationship between certain nutritional practices and overweight-underweight conditions and to the presence or absence of certain diseases.	

10. Knowledge of criteria for selection and use of health information, products and services	10. The trainee will identify agencies of the federal government which protect the consumer against quackery. He will list sources from which reliable health information may be obtained.	
11. Ability to analyze health information on the basis of sound criteria	11. The trainee will determine validity of information and claims for health products presented in visual or verbal form through mass media.	

ART EDUCATION

Although the entry skills are presented in four parts, all parts are interrelated. The first part dealing with perception of art phenomena is a foundation for the other three areas of skill and knowledge. The latter three involving art production, art history information, and art criticism are dealt with separately for the purpose of designating unique contributions of each to the total art-knowledge structure, rather than because of discreteness of the areas.

Reference to Appendix E: Content Areas will provide an overview of experiences in the pre-service program which will build upon competencies first assessed through diagnostic procedures at entry and, if necessary, brought to criterion level through appropriate experiences in the four areas.

ART EDUCATION

PART I: Ability to Perceive Phenomena of Which Art Work is Composed

GENERAL OBJECTIVES	PROTOTYPE BEHAVIORS
1. Ability to discriminate among details (art elements): lines, shapes, textures, colors, volumes, spaces, and planes	1. Given a fired unglazed 15" high ceramic sculpture of a head, the trainee will point to such visual qualities as "linear" when asked to do so. (Also, "textural", "color "space", and "volume" qualities.)
2. Ability to discriminate among gradations of each such detail (art element): hue to hue, light to dark, bright to dull, small to large, opaque to transparent, rough to smooth	2. Given 20 Munsell color chips, the prospective teacher will be able to select five and: a. Arrange them from lightest to darkest. b. Arrange them from lowest to highest intensity. c. Arrange them chromatically.
3. Ability to discriminate similarities and differences in terms of items in Nos. 1 and 2 (above)	3. Given three pieces of textile prints in color, the trainee will: a. Name and describe common characteristics shared by all three. b. Name and describe qualities unique to each.

<table>
<tr><td>4. Ability to discriminate configurations or structures of Nos. 1, 2, and 3 (above): simplicity vs. complexity, closed vs. open, symmetry vs. assymmetry, shallow (2-D effect) vs. deep (3-D effect)</td><td>4. Given ten full color reproductions of paintings at least 15" by 12" in size, the trainee will identify:
a. The most symmetrical configuration or structure.
b. The most assymmetrical.
c. The simplest.
d. The most complex.
e. The most closed.
f. The most open.
g. The shallowest or one with most nearly 2-D effect
h. The deepest or one with most nearly 3-D effect.</td></tr>
<tr><td colspan="2">PART II. Ability to Know How to Produce Art (The Artist Model)</td></tr>
<tr><td>1. Recognition and acceptance of art as a realm of experience</td><td>1. The trainee will describe his participation in the following activities:
a. Seeing movies.
b. Reading and/or buying "art" books.
c. Reading articles on art in magazines and newspapers.
d. Engaging in dialogué (critical and constructive) on the subject of art.</td></tr>
</table>

2. Ability in producing a work to engage in a process reflecting the kinds of choices made by an artist:	2.	
a. Conceiving and conveying an idea	a. Given a scribble on a sheet of paper, the trainee will incorporate it into a representational drawing covering the entire format (criteria to be developed).	
b. Selecting and using the appropriate medium or media	b. The trainee will select a medium suited to his idea in No. 2a. above and explain his grounds for selecting it.	
c. Exploring and refining the structural and expressive means appropriate to the idea	c. The trainee will complete the product in a satisfactory manner (criteria to be developed).	
PART III. Knowledge of Art with a Historical Context of Information (The Art Historian Model)		
1. Ability to recognize and recall some significant artists and art works	1. Given full-color reproductions of art works and a list of names of artists, the trainee will match correctly the artist	

	and his work. (Minimum acceptable score: 80%.) Example: Michelangelo — Guernica Moore — Bird da Vinci — Mouse Audubon — Last Supper Picasso — Reclining Figure Disney — David
2. Ability to place significant artists and art works chronologically or according to a period or school	2. Given (the five) full-color reproductions of the art works listed, the trainee will arrange them chronologically - most ancient to most modern: Example: a cave painting a Byzantine painting Rembrandt's"Night Watch" Monet's "Rouen Cathedral" Pollock's "Eyes in the Heat"
3. Ability to cite their (item 1, above) historical significance of artists and art works	3. Given reproductions of Michelangelo's "Pieta" and a Northwest American Indian Totem Pole, the trainee will name a historical factor explaining the work (e.g., name the religious influence in the work).

4. Ability to recognize and describe an artist's style	4. Given a reproduction of a painting by Ingrès and one by Van Gogh, the trainee will list two differences in style referring to color, line quality, composition, subject matter,etc.	
5. Ability to place the style in historical context	5. Given five full-color reproductions of art works and a list of three art schools, the trainee will match them correctly. Example: A. Picasso's "Musicians" B. Pissarro's "The Boulevard of Monmartre" C. Dali's "An Apparition of Face and Fruitdish on a Beach" D. Braque's "Still Life" E. DiChirico's "Crucifixion" (1) Surrealism (2) Cubism (3) Impressionism	
6. Ability to compare the styles of works of artists of eras of man, as Ancient Egyptian, contemporary American, Greek, and Gothic	6. Given five reproductions of art works, the trainee will match them with them with the appropriate era.	

	Example: Art works: A. "Portrait of Hesire" B. "Discobulus" C. Whistler's "Mother" D. Andy Warhol's "Four Campbell Soup Cans" Eras: (1) ancient Egyptian (2) Greek (3) contemporary American	
PART IV. Ability To Make Reasoned and Critical Judgments about the Significance and Quality of Works of Art (the Art Critic Model)		
1. Ability to distinguish between art and non-art	1. Given slides of pebbles in a creek, a banana, a Rembrandt etching, Michelangelo's David and an Eames' chair, the trainee, referring to the objects, will list them as either art or non-art giving supporting reasons.	
2. Ability to describe "local" (particular), "regional" (components), and "whole" (pervasive) properties of	2. Given a color reproduction of Leger's painting, "The Great Divers", the trainee will be able to list six qualities and	

qualities of art works: medium, process, subject, use or purpose (in case of utilitarian objects) style, configuration symbolism (if any)	aspects of the painting without referring to people or other recognizable objects. Any specific comments referring to color, line, etc. will be acceptable. Others must see the same qualities this individual does.
3. Ability to interpret and explain art work (fine, crafts, industrial) recognizing that there are different positions in this respect, as: use of universal vs. relative criteria and differing experimental background of viewer	3. Given a slide of an art object (Picasso's "Three Musicians" or the Houston Astrodome) the trainee will interpret and explain the meaning and be able to elaborate and clarify it.
4. Ability to make critical, reasoned judgments of art works and explain criteria used (See No. 2 above)	4. A. After reading a criticism by a critic such as Katherine Kuh, the trainee will be able to list a criterion used by this critic in making a judgment of an art work. B. After observing the art work cited in No. 3 (above) the trainee will make a judgment of it and explain criteria he used.

LANGUAGE ARTS: RECEPTIVE SKILLS

CONTENT OBJECTIVES	PERFORMANCE CRITERIA	
1. Ability to use listening skills in a variety of listening situations	1. Given four different listening presentations on tape and a purpose for listening to each, the trainee will use the appropriate listening skill to meet the purposes of each. (Example: Purpose - Locate faulty logic: Kind of listening - Critical or analytical).	
2. Acceptable reading ability	2. The trainee will score a minimum reading level of 12.0, 50 percentile, on technical material and 14.0, 75 percentile, on non-technical material when given standardized reading test.	
3. Ability to identify consonant and vowel sounds and to apply structural analysis skills	3. The trainee will make a score of 90% on suitable programmed material dealing with word attack skills for teachers.	
4. Knowledge of library skills, including ability to use all parts of a book	4. The trainee will make a satisfactory score on a standardized test of library skills.	

5. Satisfactory spelling ability	5. a. Given a spelling test on 25 phonetically spelled words, the trainee will spell at least 20 correctly. b. Given a spelling test of the 100 most commonly misspelled words, the trainee will spell at least 93 of them correctly.	
6. Ability to adjust reading rate and skills to purposes for reading	6 Given several different paragraphs and purposes for reading each, the trainee will demonstrate ability to read in various ways by meeting the purposes for each paragraph. (Example: Purpose for reading-Locate date: skill required - skimming) (Example: Purpose - distinguishing between fact and opinion; skill required - critical reading).	

LANGUAGE ARTS: EXPRESSIVE

CONTENT OBJECTIVES	PERFORMANCE CRITERIA	
1. Ability to read expressively	1. Given a story or written selection, the trainee will demonstrate oral reading	

	interpretation by reading the story with appropriate expression while being videotaped to a group or class.	
2. Ability to demonstrate skills of oral expression	2. The trainee will demonstrate: a. proper usage with standard informal and standard formal English; and b. proper pronunciation, enunciation and articulation when giving: 1. short speeches 2. oral directions	
3. Ability to carry on informal discussion	3. Given a topic, the trainee as a member of a small group will contribute to the informal discussion of the assigned topic.	
4. Ability to summarize oral presentations in the form of note-taking	4. Given a lecture, the trainee will summarize the main points of the lecture by note-taking and writing a summary.	
5. Ability to summarize written presentation in the form of outlining	5. Given a written selection, the trainee will summarize the main points in the form of an outline.	

6. Knowledge of basic skills of written expression	6. Given a topic, the trainee will develop a theme of 600 words in order to demonstrate: a. skill in legible handwriting b. skill in organizing written work in good sentences and paragraphs c. skill in using punctuation marks and capital letters d. ability to proofread for errors.	
7. Knowledge of major types of writing	7. The trainee will list and describe characteristics of the major types of written work; including poetry, prose, short stories, essays.	
8. Knowledge of grammatical structure	8. Given 30 words, the trainee will analyze, describe and arrange them into sentences using a linguistic approach.	
9. Basic skills of typewriting	9. Given a written selection, the trainee will type 30 words per minute with not more than three errors per page of copy.	

APPENDIX K

STAFF DEVELOPMENT: DETAIL OF PILOT PROGRAM

Aims

In order to implement the model program (which builds upon the extensive use of behavioral objectives, varied media of communication, individualization of students' programs, and computer monitoring of progress) a faculty will need lead time to prepare for an enlarged repertoire of teaching activities and for a reformulation of some of the familiar role expectations. The purpose of the staff development phase is to provide an opportunity for faculty members:

1. to investigate details of new techniques to identify those which can be adapted to some appropriate use in their teaching;
2. to cultivate skills in several techniques to the point of competence, facility or expertise; and
3. to apply selected techniques to their specific fields or areas of responsibility, preparing or adapting plans and materials for initial or continued use with students.

While it is expected that all faculty members will have a degree of experience with a variety of recently developed techniques, it may be necessary to extend their preparation in areas such as the following:

Programmed Instruction

Group Interaction Training

Observational Techniques

Micro-teaching

Individually-Prescribed Instruction

Multi-media Techniques

Simulation Techniques

Areas for Extension of Preparation

Programmed Instruction. The model program incorporates many of the promising products of educational technology which utilize the principles and techniques of programmed instruction. A faculty must be aware of [illegible] adaptations (such as computer-assisted instruction), and informed about theoretical and practical considerations involved in the use of programmed instruction techniques. Staff development activities should be aimed at:

1. providing orientation to a systems approach to teaching;
2. teaching the basic principles and techniques of programmed instruction; and
3. demonstrating the use of the computer in implementing programmed instruction.

Activities can include seminars, examination of related literature, short computer-assisted instruction courses, and development of programmed material under supervision.

Since use of modern hardware and software is a requirement of the model, the faculty must have access to new materials as they become available. Hence, a teaching resource center should be set up where faculty can examine packaged programs, teaching kits, programmed units and other materials currently being marketed. Experts in subject matter areas can order materials and conduct familiarization sessions in their areas. In addition, seminars can be held on topics such as relating the materials of one discipline to another and introducing materials to students.

Group Interaction Training. While all faculty members have worked in groups at one time or another, and some may have had formal experience in such activities as sensitivity training, the program needs to offer opportunities to observe more closely the mechanics of group interaction. Established group-interaction specialists should be sought for this phase of the staff development program. By studying techniques for dealing with the actions of people in groups, faculty members would be better able to appraise the role of motivations, feelings, prejudices, strengths, and weaknesses, and to analyze the effects of one person's behavior on others. These techniques can assist both prospective and working professionals in transactions involving interpersonal contact.

Observational Techniques. An impressive number of instruments and techniques have been developed for observing, measuring, and analyzing various aspects of teacher and learner behavior in the classroom, focusing upon verbal interaction, non-verbal interaction, classroom climate, or some specialized dimension which is the concern of a particular researcher. In order to form a basis for assessing the advantages and limitations of a number of systems in terms of their usefulness with a given group of students, or their utility as a research device, faculty members should be given opportunity to analyze and develop facility in the use of one or more of the instruments or techniques currently available. Reference to current anthologies such as *Mirrors for Behavior* (Simon & Boyer, 1967) can assist in the determination of systems to be selected.

Micro-teaching. Micro-teaching (Bush and Allen, 1964), a scaled-down sample of teaching, is a controlled practice technique shown to be useful in teacher training and vital to the objectives of the model. In order to use this procedure, the complex act of teaching must be separated into its simpler components, and supervising personnel must be thoroughly familiar with each component. Since video-taping is often an integral part of micro-teaching, ability to utilize the equipment is part of the training. A staff development program can provide, where necessary, instruction in the use of micro-teaching procedures, analysis of unique features of micro-teaching, and opportunities to refine techniques in the utilization of this tool.

Individually-Prescribed Instruction. In the model program, faculty members need to be familiar with the most efficient techniques for diagnosing, prescribing for, and evaluating the progress of the individual prospective teacher as he advances through his training. A staff development program can provide orientation for faculty members in methods of planning and implementing individualized instructional objectives in a form compatible with program elements and efficient for the mechanics of program management. It can provide opportunity for the faculty to become intimately acquainted with what the model requires of the student with respect to identifying values, stating behavioral objectives, selecting and organizing content, developing a variety of strategies, and acquiring skill in integrating activities and evaluating outcomes.

Controlled exercises in the analysis of student behavior in terms of agreed-upon objectives should be an important feature. In addition, faculty members should have opportunities to use the best available techniques for the kind of continuous evaluation which is integral to the prescribing of individual learning experiences.

Multi-media Techniques. The use of audio-visual materials and equipment has been for some time standard in the college teacher's repertoire of techniques for mediating instructional content. However, in practice, the full exploitation of the possibilities of currently available media depends upon a level of competence and commitment which must be actively cultivated. Especially important are: (1) a conceptual framework relating media to communication, (2) a theoretical basis for selection of media appropriate to a specific objective or kind of learning, and (3) facility in the use of single-medium or multi-media techniques.

Faculty members should have the use of a teaching resource center with an efficient system for storage and distribution of materials and equipment, as well as arrangements for experimental installations and orientation programs. In addition, an established media specialist should train and demonstrate to assure familiarity with media. He can supply consultant expertise to suggest and encourage innovation in the use of media.

Many of the performance and decision skills of teaching can be attained initially in contacts which approximate actual teaching with varying degrees of reality. Instructional games, role playing, and critical incident simulations are training techniques which fall into this general category. These types of simulation activities hold great promise for teacher training enterprises, and are expected to be heavily utilized in implementations of this model program. Activities to familiarize faculty members with simulation techniques and to provide them with the skill to utilize the techniques in their own teaching should be provided.

Implementation and Organization

A pilot program has been designed which suggests a workable plan by which faculty members would receive first a broad exposure to a range of techniques, and later an opportunity for more intensive work with selected areas. This suggested training program was first described in Chapter IX. Figure B presents a schematic representation of this design.

An Orientation Period provides a brief, broad exposure to the seven areas of development for all faculty members involved in the preparation of elementary school teachers. This can be in the form of a series of demonstration-seminars for acquainting faculty members with the scope and potential of each area. This broad exposure period is also essential in order to provide a basis for communication among faculty members as they begin to work in greater depth in the seven areas.

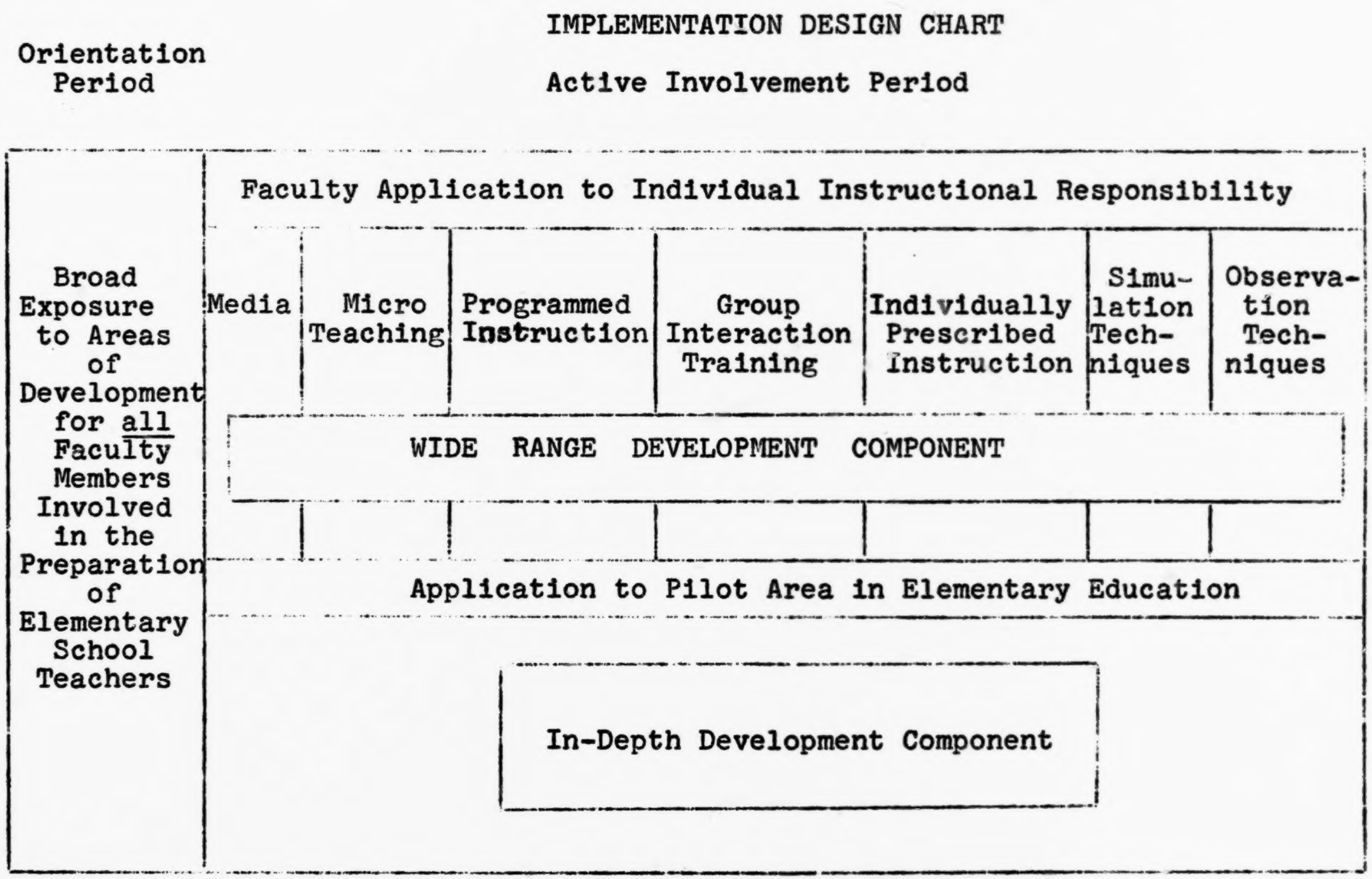
An Active Involvement Period would begin in the summer preceeding the initiation of the model program when a pilot group of selected faculty members engage full-time or half-time in an Active Involvement Period. A period of this sort could have two components: a Wide-Range Development Component and an In-Depth Development Component.

1. Wide-Range Development Component

Faculty members at this stage would divide into seven sub-groups and rotate through the seven areas. Each person would have opportunity to practice the techniques with the availability of feedback from colleagues, and thus to develop facility in most of the areas.

2. In-Depth Development Component

After participating briefly in several of the rotation groups, members of this component would devote themselves to an application of techniques to a segment of the program (such as language arts), developing plans and materials for the actual pilot group of trainees.


IMPLEMENTATION DESIGN CHART
Orientation Period
Active Involvement Period
Broad Exposure to Areas of Development for all Faculty Members Involved in the Preparation of Elementary School Teachers
Faculty Application to Individual Instructional Responsibility
Media
Micro Teaching
Programmed Instruction
Group Interaction Training
Individually Prescribed Instruction
Simulation Techniques
Observation Techniques
WIDE RANGE DEVELOPMENT COMPONENT
Application to Pilot Area in Elementary Education
In-Depth Development Component

STAFF DEVELOPMENT PLAN

Figure E

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